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Nick Rhodes of DURAN DURAN On Making Analog Magic

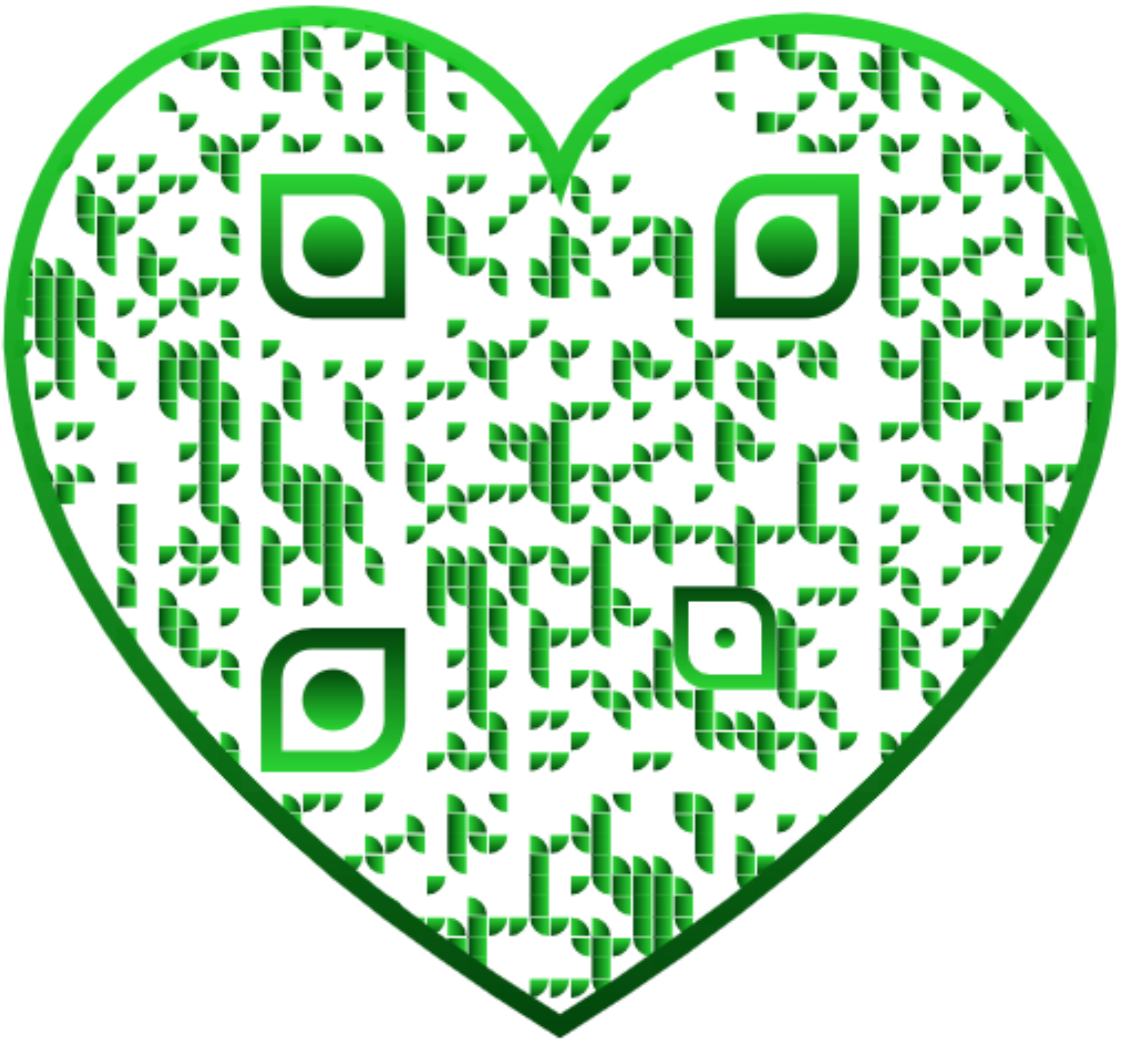
REVIEWS

Spectrasonics OMNISPHERE 1.5

Roland ATELIER AT-350C

3 New Alternative CONTROLLERS

NewBay Media
08.2011
A MUSIC PLAYER PUBLICATION



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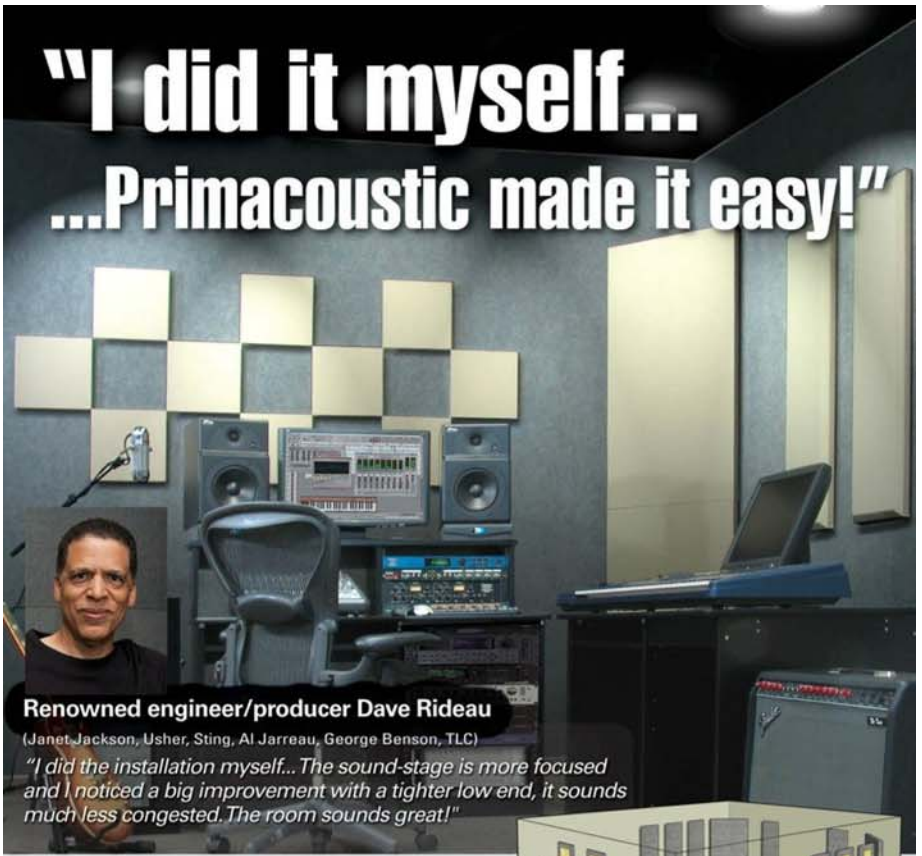

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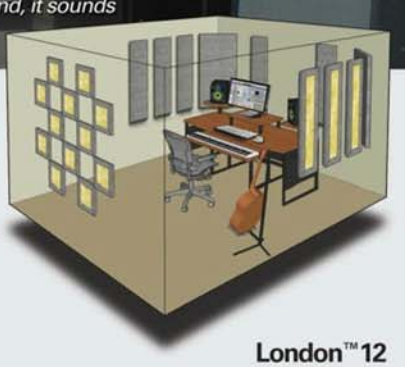

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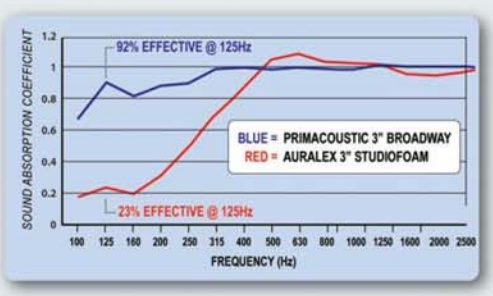

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EDITOR: Stephen Fortner
sfortner@musicplayer.com
MANAGING EDITOR: Debbie Greenberg
dgreenberg@musicplayer.com
ASSISTANT EDITOR: Lori Kennedy
lkennedy@musicplayer.com
EDITORS AT LARGE: Craig Anderton, Jon Regen
SENIOR CORRESPONDENTS: Jim Aikin, Tom Brislin, Ed Coury, Michael Gallant, Robbie Gennet, Scott Healy, Peter Kirn, Mike McKnight, Dominic Milano, Franics Preve, Ernie Rideout, Mitchell Sigman

ART DIRECTOR: Patrick Wong
pwong@musicplayer.com
MUSIC COPYIST: Matt Beck
PRODUCTION MANAGER: Amy Santana

GROUP PUBLISHER: Joe Perry
jperry@musicplayer.com, 770.343.9978
ADVERTISING DIRECTOR, NORTHWEST, MIDWEST, & NEW BUSINESS DEV.: Greg Sutton
gsutton@musicplayer.com, 925.425.9967
ADVERTISING DIRECTOR, SOUTHWEST:
Albert Margolis
amargolis@musicplayer.com, 949.582.2753
ADVERTISING DIRECTOR, EAST COAST & EUROPE:
Jeff Donnenwerth
jdonnenwerth@musicplayer.com, 770.643.1425
SPECIALTY SALES ASSOCIATE, NORTH:
Contessa Abono
cabono@musicplayer.com, 650.238.0296
SPECIALTY SALES ASSOCIATE, SOUTH:
Donovan Boyle
dboyle@musicplayer.com, 650.238.0325

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From the Editor

If constantly hunting for great material for this magazine has taught me anything, it's that being an expert about music or technology involves quite a different skill set than expressing ideas clearly in writing. I wouldn't call the two mutually exclusive, but there are days when it feels like being a smokin' jazzer or raving synth geek accesses a different part of the human brain than proper grammar and inspiring writing style. Frank Zappa once called rock journalism "people who can't write, interviewing people who can't talk, in order to provide articles for people who can't read." As a subscriber, I always loved *Keyboard* for being an exception to that rule. As an editor, I learned that keeping things that way is effin' hard work.

That's why I'm so glad to welcome Lori Kennedy as assistant editor. She joins us from *Remix* magazine, where she did everything from writing and editing to planning those Babylonian "Remix Hotel" music events. Not only does she have the requisite gluttony for punishment one needs to work here, but she's as obsessive about a well-programmed synth bass groove as she is about when to use a semicolon versus an "em" dash—like this. Thanks for being part of the wonderful madness of making *Keyboard*, Lori, and for the saving of my butt that I know has only just begun.

DIG MY RIG

The dashboard of my studio when I'm in songwriting mode is the Korg OASYS, especially the MOD-7 engine for wonderful beds and textures. I can rough out most of the song structure with just the OASYS and my Pro Tools HD rig. A Command 8 control surface makes managing large sessions relatively painless. Then, I can swap in hardware synths from my "paintbox" for various parts. For lovely EPs and organ, there's the Nord Stage—I love its weighted feel, and it's fantastic if I want to compose without turning on every keyboard in the studio. For vintage sounds I have a Roland Juno-60, an SCI Prophet-600, and a Korg Lambda for those lush chorus strings. Signature leads are provided by the breath-controlled Yamaha VL-1 and a Moog Voyager Old School. Unusual textures are courtesy of a Waldorf MicroWave XT and an Ensoniq Fizmo. For generative music I have Serge and Mattson modulars. Last is "Marie," a Baldwin Acrosonic spinet piano that, for some reason, I absolutely adore.

James Maier, Mukilteo, WA, via Facebook

Left, front to back: Serge modular synth, Digidesign Command 8 above Korg OASYS, Korg Electribe R. *Rear synth stand, top to bottom:* Roland Juno-60, SCI Prophet-600, Nord Lead 2X, Nord Stage. *Small rack:* Waldorf MicroWave XT above Yamaha VL-1M. *Front synth stand, top to bottom:* Ensoniq Fizmo, SCI Six-Trak, Yamaha VL-1, Waldorf Q. *Front right:* Baldwin Acrosonic piano, with Minimoog Voyager Old School (not visible) on top.

[To hear almost everything in this picture put to good use, check out James' latest release, "Stealing the Sun," at carbon111.bandcamp.com. —Ed.]

SOAPBOX

I'm a subscriber in the U.K., and wanted to comment on the "Time Machine" virtual analog synth article at the back of the April issue. I disagree with your comment that we'd come a long way since 1999. Most of those synths can still easily hold their own with synths of a decade later, and are still in widespread use making current music. In my opinion, there was a bigger jump in sound quality from 1989 to 1999 than from 1999 to 2009. We haven't come as far as you think.
Jamie Watts, United Kingdom, via email

I agree —those synths sound great. In fact, I have a Supernova II that I'll give up when they pry it from my cold, dead fingers, and I regularly kick myself for passing on the Korg Z1. My comment that we've come a long way wasn't so much about sound quality as about what we get for the price—whether that's sound, features, or the fact that something is real analog. That, I think, has *improved a lot since 1999, when something like an UltraNova, Slim Phatty, or Prophet '08 would've been unheard of.* Stephen Fortner

FACEBOOK COURT OF OPINION

Q: What's the most fun keyboard you've ever played? Not necessarily the best-sounding, or the most useful, but the most *fun*?

Larry Kleinke: I'd have to say the Sequential Pro-One. The sound, the layout–it's just fun to let loose and create out-of-this-world sounds. The Roland SH-101 comes in a close second.

John Fez Ferry: It has to be the MicroKorg. The laughs we had outta making whacky sounds and the mad vocoder when we came in drunk are second to none!

Warren Christiansen: Minimoog, absolutely! The guy at the music store accused me of exterminating pests with it.

Robert Parducci: Little Casios are a blast: the SK-1 sampler, the RapMan with its faux turntable, and the CZ-101 were a ton of fun.

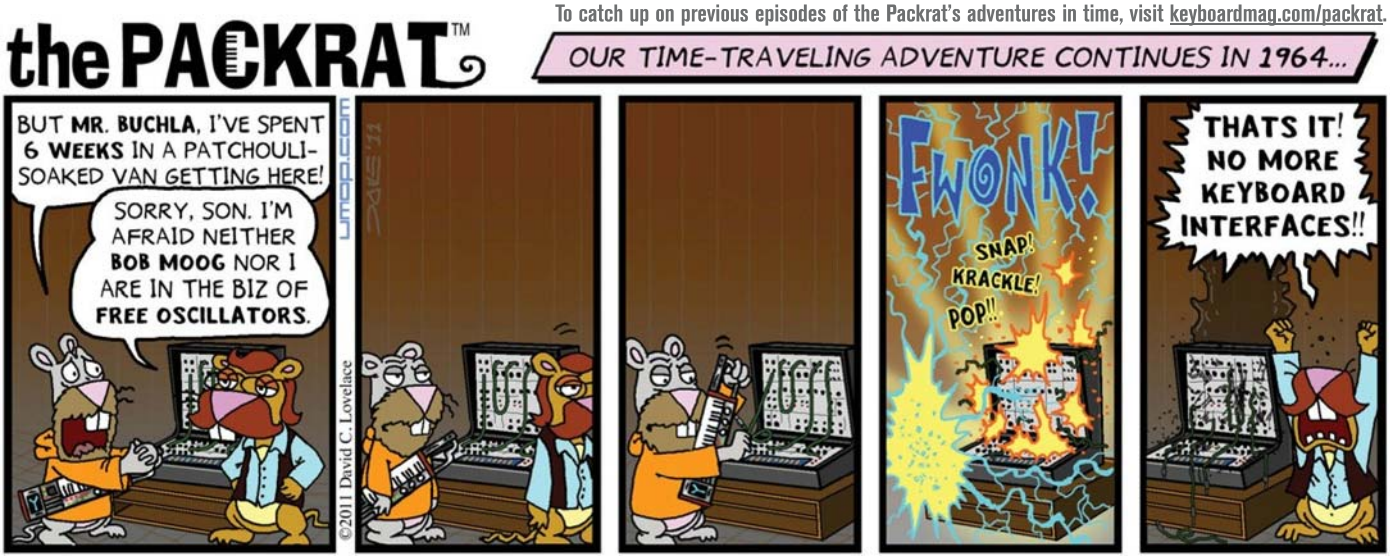
Jamie Smartypants: The Roland JD-800. It's fun to take digital sounds and manipulate them in a way familiar from analog synthesis.

Paul Mouradjian: Chroma Polaris. Lots of neat ways to control the keyboard–inverted voltage (backwards). Also, the Glide function is tremendous for slide guitar effects.

Ralph DeLong: Ensoniq Mirage back in 1986. I sampled everything I saw with that thing. I always had a mic hooked up to it.

Brian Hintze: I had the Korg 707 and Poly-800 Mk. II. Cheapie synths, but when you turned up Rush and Journey loud enough, they just blended right in!

To catch up on previous episodes of the Packrat's adventures in time, visit keyboardmag.com/packrat.



JODI HANNAH

DANA GLOVER

Starts All Over Again

"I didn't know it would take this long to come out with something," Dana Glover jokes just before singing to a packed house at New York's Soho Apple Store, alongside saxophonist Dave Koz. Glover's song "Start All Over Again" (from Koz's recent release *Hello Tomorrow*) marks the pianist, singer, and songwriter's much-anticipated return to the recorded stage—her first since her 2002 album *Testimony*. "And even though this is a song on Dave's album and not mine, it's my song—so it matters a lot to me."

Testimony boldly announced Glover's musical arrival on a grand scale, packing her signature punch of hook-laden songs, framed by powerhouse piano and vocal work, along with the always scintillating string arrangements of Paul Buckmaster. Songs like "Thinking Over" and "Rain" continue to garner her worldwide acclaim, nearly a decade after that album's release. But Glover has been plotting her recorded return for years, honing her craft, one chorus at a time. "Since *Testimony*, I've worked with a bunch of different producers, always writing and staying passionate about the music," she tells me. "I'm a different person than I was then, because we all change. In some ways, I feel right on time."

Glover has reason to be excited of late. Her collaboration with Koz on "Start All Over Again" launched her back into the spotlight, with both guest appearances on the hit ABC series *Desperate Housewives* and a winter 2011 tour coming up. For Glover, it's proof positive that a song sometimes has a mind of its own. "I had cut a demo of that song," Glover says. "And when Dave heard it, he wanted it to sound like the demo. I went with it, because I believed in the song and thought that no matter how it was produced, the message would ring through. And it did."

These days, Glover continues to focus her efforts squarely in the song department, crafting new material, oftentimes at her home piano. "My main goal is to make sure my songs are done well, and able to be heard," she says. "Getting the chance to perform and connect with people again puts it all into perspective. I'm excited for what's next." Jon Regen

Video: "Start All Over Again" with Dave Koz.

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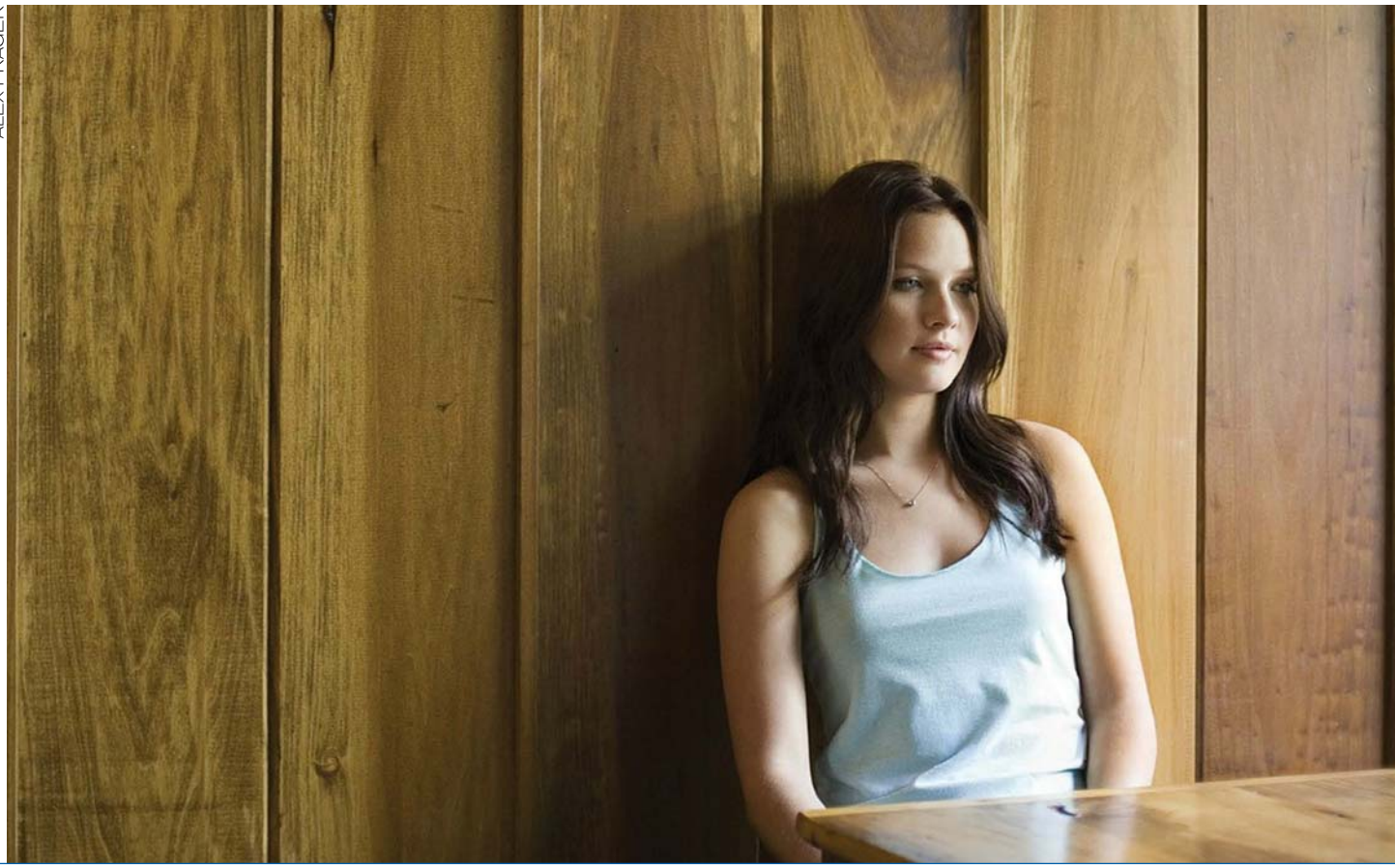
ALEX PRAGER

LAUREN PRITCHARD

From the Hard Way to Broadway

Lauren Pritchard may be the American answer to Adele and Duffy, right down to sharing producer Francis "Eg" White with the British neo-soul queens. However, her roots in Americana are what set her music apart.

Born in Jackson, Tennessee, Pritchard's music is a diary of her life until now, with healthy doses of heartache and reflection on her small-town upbringing. Pritchard's husky voice recalls a modern-day Dusty Springfield. It was her turn as Ilse in the Tony-winning Broadway musical *Spring Awakening* that brought her a wider audience. After three years in New York, she left the show to concentrate on her music, meeting White through a record deal and eventually holing up in west London to produce *Wasted in Jackson*. Though Pritchard plays piano on the record, White plays a major instrumental role, including most of the drums, bass, guitars, Hammond organ, programming and backing vocals, plus arranging real strings and horns. The result is a knockout—a timeless collection of swaggering soul that gives Pritchard an amazing start to her solo career. The writing is mature beyond her 23 years, matching her voice's seasoned *gravitas* and her music's emotional impact.

As a child, Pritchard idolized an older cousin who danced, sang, and played piano. "I just wanted to *be* her," recalls Pritchard. "I wonder what my life would be like if she hadn't been there to inspire me." Though no one in her immediate family was musically inclined, her grandparents had a piano, as did a family friend. Her parents listened to a lot of the popular music of the day, but it was Billy Joel who held a special interest for her. "My Dad loved Billy and would always play *52nd Street* while driving us to ballet lessons," she says. "I think it's the best album, though I always seem to listen to *The Stranger* the most. It doesn't get any better than those two."

As an inspired young songwriter, Pritchard moved to California in her teens, struggling in the often-harsh L.A. scene until landing the Broadway show took her to New York. Those years of nonstop performance honed her skills, but she'll be the first to tell you that performing on Broadway and fronting a band are different pursuits. "The thing that being on Broadway taught me the most was what my limits are and what my endurance is," she says. "Broadway's a tough schedule—eight shows a week, six days a week. It teaches you that you have to take care of yourself and do the preparation." That includes getting into the mindset of the part you're playing. "On Broadway, you're playing a character. On the album, I'm playing myself, which really is nice. You don't have to worry about your character analysis." Part of her work ethic stemmed from the ballet dancing she studied in her youth. "I grew up doing classical ballet until I was 16," she says. "From a very young age, ballet taught me discipline. I was always playing the piano and singing as well. Classical piano and ballet are very regimented, and you have to put in the practice or you don't see results."

One listen to *Wasted in Jackson* will show you those results. Live, Pritchard is captivating, and there's no doubt that her talents are genuine, not the product of studio chicanery. You can't fake this kind of mojo. Robbie Gennet

NANCY HEYMAN

RICHARD X. HEYMAN

On Writing Rock Opera

Veteran singer, songwriter, and multi-instrumentalist Richard X. Heyman is no stranger to creating outstanding music. In fact, *All Music Guide* called him "perhaps America's greatest unsung hero of power pop." With his latest release, though, the two-album set *Tiers/And Other Stories*, Richard turns away from his normal guitar fare with a compelling, keyboard-driven rock opera.

Through artfully crafted songs full of unexpected harmonic changes and structural twists, Richard tells the story of first meeting his wife Nancy, breaking off their affair in order to be a musician in Los Angeles, and then returning and marrying her. A straightforward tale, perhaps, but just ask Richard—turning a personal, emotional experience into a fully orchestrated, multi-disc project is no simple task.

Writing and recording took roughly two years and was largely a collaboration between spouses. "Nancy, who's an excellent bass player and engineer, worked during the days, so we'd record in dribs and drabs," he recalls, "two or three hours a night, and a little more on the weekends. Because we have a small home studio, we could only do one thing at a time." As a production team, they often found themselves focusing on different aspects of their tracks-in-progress. "She's a real stickler and really wants everything in tune and in time," says Richard. "I'm looking more for the feel. But I respect Nancy's musical abilities so much that she has *carte blanche* and final say. If she doesn't like something, I'll redo it."

The couple's home recording setup—Apple Logic Pro 7 monitored via a Mackie Big Knob, a Yamaha P140 digital piano, and a Røde Classic Tube microphone running through a Summit MPC-100A preamp/compressor—was the staging ground for Richard's piano and vocal work. "We took the piano and vocal tracks into a proper studio where I laid down drums, then took it back to our Logic studio and did the rest: more vocals, more keyboards, and we had people come over to do orchestrations. Then we mixed it."

Listen to the bittersweet "Last Thought in My Mind" and you'll hear Richard's left hand making smooth magic up and down the piano's lower register, an inclination he attributes to Joni Mitchell. "Her piano playing is very emotional and original, the way her left hand moves against the right," he describes. "On her *Ladies of the Canyon* album, there's basic arpeggiating in the left hand and lots of sixths and other harmonies in the right. That was a huge influence on me. I started out as a drummer, and Joni Mitchell would be the number one reason as far as how I got from just clunking around on the keyboard to being able to play solo piano songs with a moving left hand."

Many of the songs for *Tiers/And Other Stories* came to Richard almost effortlessly, inspired by creative noodling on his Yamaha P140. Other tunes required more trial and error, especially when it came to finding the perfect next chord for any given musical moment. For songwriters facing similar harmonic writer's block, Richard recommends an experimental remedy: sit on the last chord you've written and "move one finger to another note. You now have a new chord you didn't expect. How does that make you feel? If it feels good, go with it. If not, keep looking." Michael Gallant

Video: Richard on creating and recording *Tiers/And Other Stories*, the percussion aspect of piano, and more.

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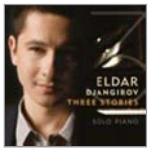
ELDAR DJANGIROV
Three Stories



Prodigious piano wunderkind Eldar tackles the solo piano pantheon and wins with a knockout punch. Equal parts technical testimony and heartfelt homage to his penchant for standards, originals, and classical, the album brims with fire *and* feeling. Check out his masterful reading of the Charlie Parker cutting room classic "Donna Lee" for just a sliver of the album's offerings.
(Sony Masterworks Jazz | eldarjazz.com)

EMMET COHEN
In The Element

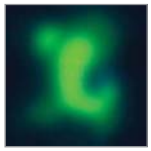
Twenty year-old Emmet Cohen has been turning heads and ears of late, most recently as a finalist in the 2011 American Pianists Association Cole Porter Jazz Fellowship Awards. His debut disc *In The Element* shows the buzz to be well deserved, with the nimble-fingered Cohen skating across a varied set of jazz jewels and originals, backed by the blistering rhythm section of Joe Sanders and Rodney Green. Listen to Cohen's Latinized original "The Swarm" for proof positive of great things to come. (emmetcohen.com)

MARC BROUSSARD
Marc Broussard

Alongside producer and pianistic sparring partner Jamie Kenney, searing singer-songwriter Marc Broussard breaks out, shining on tracks like the Southern-swagger "Bleeding Heart" and the churchified "Let Me Do It Over." Broussard has always sung from the heart—now in the company of Kenney and ace audio engineer Michael Brauer, and surrounded by vintage keyboard vibes, he belts from his gut and brings home the soul.
(Atlantic | marcbroussard.com)

Lori Kennedy

BLANCK MASS
Blanck Mass



Benjamin John Power—one half of U.K. noise duo F**k Buttons—has created an electronic utopia with his debut solo effort. Full of soaring synths and tinkly found sounds, *Blanck Mass* sounds like it could be the soundtrack for the Discovery Channel's *Planet Earth*. I could happily watch lava gracefully flow from a volcano while listening to this album. And because Power is one half of F**k Buttons, *Blanck Mass* is perfectly peppered with noisy, dirty synths. Excellent.
(Rock Action | blanckmass.bandcamp.com)

COM TRUISE
Galactic Melt

What's better than synths, outer space, robots, and the '80s? Nothing, according to *Galactic Melt*. I have to agree. Com Truise (a.k.a. Seth Haley) artfully crafts each track into a mix of retro and future-forward aural pleasure. While the tracks have an '80s feel due to the synth sounds, Com's song composition and production is smart and current. Songs like "VHS Sex" and "Futureworld" really show off Com's bang-up skills on the keys. Highly addictive—and, like, radical, dude. (Ghostly | comtruise.com)

SANDER KLEINENBERG
5K

The lauded Dutch producer delivers straight-up progressive house bangers with *5K*. Co-produced by electronica mainstay Josh Gabriel, the album's super-catchy opening tracks "T.I.O.N. (This Is Our Night)" and "Chemically" (with Ryan Starr on vocals) feature Kleinenberg's signature propulsive beats and buzzy synths that are sure to get bodies dancing and all sweaty. Kleinenberg also enlisted guests Jamie Cullum, Kraak & Smaak, and Ursula Rucker. Bust out the Red Bull and glow sticks. (This Is Recordings | 5k.tv)

Robbie Gennet

CHLOE DOLANDIS
Bring Back the Fever

What a debut! This album practically bursts out of the speakers with the swinging, horn-powered opener "Let's Make This Moment," setting off a terrific musical journey. Most of the acoustic piano, Rhodes, and Wurly is deftly handled by Max Farber. Adding keyboards are Rick Krive on B-3 and some piano, renowned producer Zach Ziskin, and Chloe's dad Rory on further piano. From upbeat tracks like "Solid Woman" and the title cut to ballads like "Learning To Let Go," this flawless disc should launch Dolandis and crew onto the global scene. (DF Music | facebook.com/chloedolandismusic)

DENGUE FEVER
Cannibal Courtship

Dengue Fever's Cambodia-meets-Cali vibe is as alluring as ever. Led by Chhom Nimol, the band has developed their sound from a hybrid of sorts into its own genre of music, with Zac Holtzman adding bold vintage keyboard sounds—including a Farfisa Compact through a Leslie, a Nord Stage Compact, and a Baldwin Fun Machine organ. The way Holtzman plays on tunes like the upbeat "Mr. Bubbles" and the reverb-drenched "Sister in the Radio" fits the mood perfectly. Otherworldly and intoxicating! (Concord | denguefevermusic.com)

GARAGE A TROIS
Always Be Happy, But Stay Evil

Describing Garage à Trois is a search for adjectives, as you never quite peg the vibe before they morph again. Equal parts harmony and dissonance, they're propelled by the explosive drumming of Stanton Moore and driven by the dynamic sax of Skerik, the vibes and percussion of Mike Dillon, and the psychedelic trip that is Marco Benevento on keys. The interaction creates a post-jazz apocalypse of melodic tension. There's no pigeonhole to apply to Garage à Trois other than their name, a feat that most musicians find hard to attain. (Royal Potato | garageatrois.net)

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NEW GEAR

by Stephen Fortner

RHODES RPC-1

Concept: Ultralight MIDI controller using same technology as the MIDI-fied Mark 7 pianos.

Big deal: USB-powered. Real Rhodes action. Polyphonic aftertouch and optical key sensors. Carbon fiber body weighs just 38 pounds. Four zones onboard for splits and layers.

We think: Having played a Mark 7 that has MIDI, this looks to be a super-premium MIDI controller at an approachable price.

Estimated: under $2,000 | rhodespiano.com

PG MUSIC BAND-IN-A-BOX FOR ANDROID

Concept: Remote client for Band-in-a-Box for Windows.

Big deal: Requires you to have the Windows version on your computer, but lets you enter chord progressions on the go for later transfer to your desktop, or lets you take songs from your computer on the road. Renders M4A audio files.

We think: BiB users need never lose another idea again—if you have an Android phone, you have an arranger scratchpad.

$0.99 | pgmusic.com | market.android.com

MUSICROW EBOLA

Concept: Semi-modular virtual analog soft synth for Native Instruments Reaktor.

Big deal: Over 300 preset sounds. Continuously variable oscillator waveforms. Wavetable synthesis mode. Ultrasaw stacks nine detuned sawtooth waves. Sub-oscillator also has Ultrasaw mode. Envelope follower lets you affect almost any internal parameter using external audio.

We think: Cool, cheap soft synths are like black shoes. You can never have too many.

Direct: €39 (approx. $55) | mcrow.net

H.E. AUDIO POETIC GUITARS

Concept: Exhaustive sample-based instruments of three different acoustic guitars. Windows VST only.

Guitars: Ryan Nightingale Grand Soloist, Rodriguez Spanish guitar, and Fleta eight-string classical.

Big deal: 500MB to 1.5GB of samples per guitar. All the articulations you'd expect. Up to 12 velocity layers. Three sample sets for pick, finger, and fingernail playing. Converts keyboard chords to guitaristic strums.

Each: $99 direct | All three: $208 direct | bettermusicdistribution.com

See press releases about new gear as soon as we receive them at keyboardmag.com/news.

OLYMPUS LS-20M

Concept: HD video recorder with high-resolution stereo PCM audio recording.
Big deal: Records up to 1,080p resolution at 30 frames per second. Great mics with low-cut filter and auto level control. Records audio in PCM linear or MP3 formats.
We think: With Flip out of the picture (pun intended), this gives the Zoom Q3HD some meaningful competition. But what's with putting the lens on the top?
Approx. street: $300 | olympusamerica.com

ALESIS iODOCK

Concept: Formerly known as the Studiodock, it's a serious audio interface for the iPad.
Big deal: Two XLR combo ins, one with guitar/line impedance switch. Phantom power. USB and five-pin MIDI in and out. RCA video output for external monitors. Main outs and stereo headphone out are all on 1/4" jacks. Works with iPad 1 and 2.
We think: A lot of very powerful synth and recording apps for iPad will now be taken more seriously.
List: $399 | Approx. street: $200 | alesis.com

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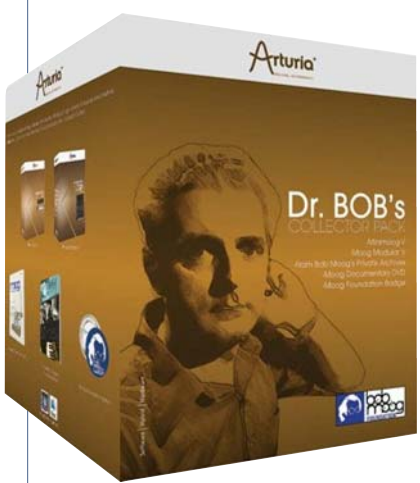

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Direct: $299 | arturia.com

Spectrasonics *Bob Moog Tribute Library*

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Direct: $100 | spectrasonics.net

Rock Piano Workshop

WELL-TIMED NOTE RELEASE

by Michael Gallant

When I began working on the debut album for my new band Aurical, one of my biggest goals as keyboardist and co-producer was a simple one: Make the piano rock. We're talking Les-Paul-plus-Marshall-stacks intensity here, something that would hopefully make Pearl Jam, Led Zeppelin, and maybe even McCoy Tyner proud.

The question was, how? Sure, strong octave attacks, open power-chord voicings, and the right amount of dissonance got the job done on some tracks, but thrashing a Yamaha grand into submission only went so far on others. In the course of recording a song called "Redhead Girl," I came upon another strategy: Add more drive and guts by paying just as much attention to the *release* of each note as to its *attack*.

The concept is one that any good bass player will know inside and out, but for many keyboardists, this can be a new type of awareness. Paying attention to when and how a note stops can help make your acoustic piano work whisper and cry, no matter what musical genre you're jamming in—or in the case of "Redhead Girl," help it rock with the grit the song calls for. Here are some examples from this song to help you hone your own pianistic note release.

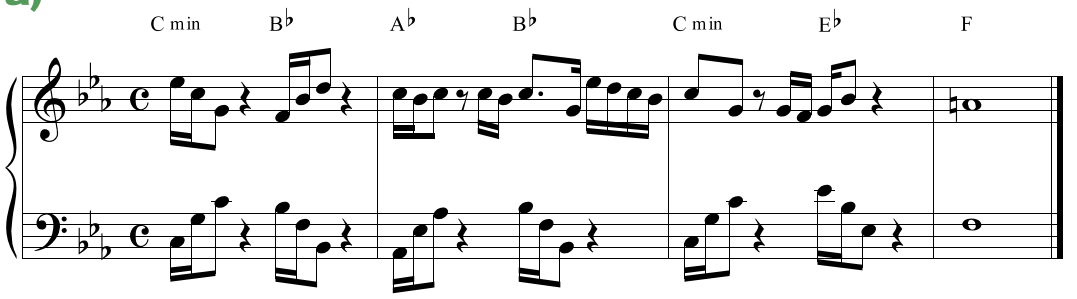
1. Push and Pull

"Redhead Girl" is bookended by a piano motif that recurs throughout the tune, with minor variations. **Ex. 1a** shows the figure in its most basic notation. Play through it to get a feel for the shape of the motif, then try **Ex. 1b**, which shows more explicitly how long each note is held. **Ex. 1c** shows how long the notes are held in a MIDI piano roll view.

A rest is just as important as a note. When I play this figure, I make a point of sharply pulling my hands off the keys–precisely when beats 2 and 4 hit in the first measure, and so on. A clear example of this in the online audio file is right after the first chorus at 1:47.

Notice how folding in this subtle precision adds a more propulsive push-pull feel to the entire figure. I've found that when playing this tune with just piano and voice and no band, being extra-crisp on my releases for this part of the song goes a long way towards replacing the drive and intensity that a bassist and drummer would otherwise bring.

a)



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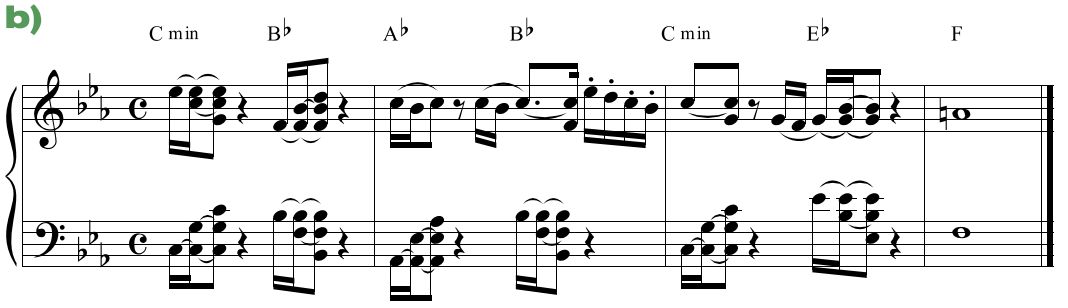

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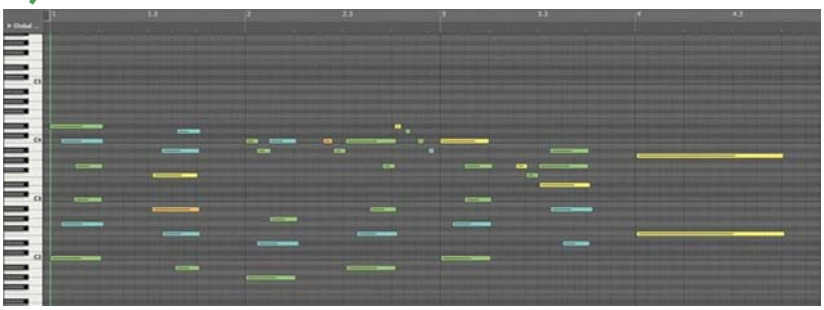


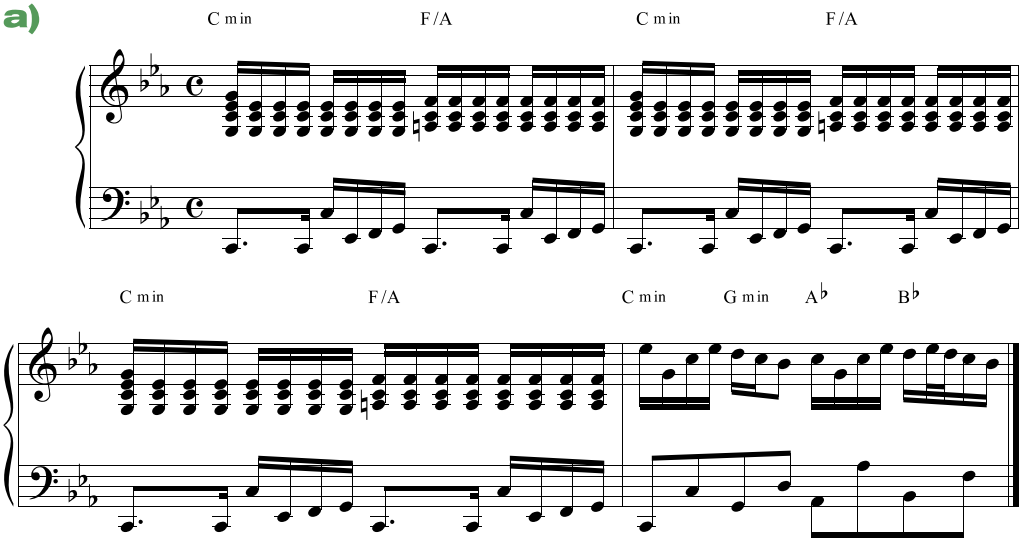
2. Sustain Like Slash

One of the great things about Slash, or any equally talented hard rock guitarist, is how he purposely makes notes bleed into each other, creating a beautiful fistful of noise that grows in intensity before exploding into the next phrase. This sort of effect is possible in rock piano as well.

Ex. 2a shows the first four bars of the piano part for the chorus, again, notated simply. Once you've played through it a couple of times, and listened to the track to hear it in context, look at **Ex. 2b**, which gives a more detailed account of what notes cut off when. Using traditional notation to convey the note lengths can be a little ambiguous, so again, see the MIDI piano roll in **Ex. 2c** for a more visual representation.

Notice the sustained *G* on top of the rhythmic figures in the right hand during the first three measures, and the way the right-hand notes in the final measure bleed into each other, adding momentum without muddying the signature riff too much. Played just right, bar 4 captures the energy ramped up by bars 1 through 3, pushing the listener forward into the second half of the chorus at bar 5—where the tension from the sustained notes releases into the staccato chord figure once again.

a)



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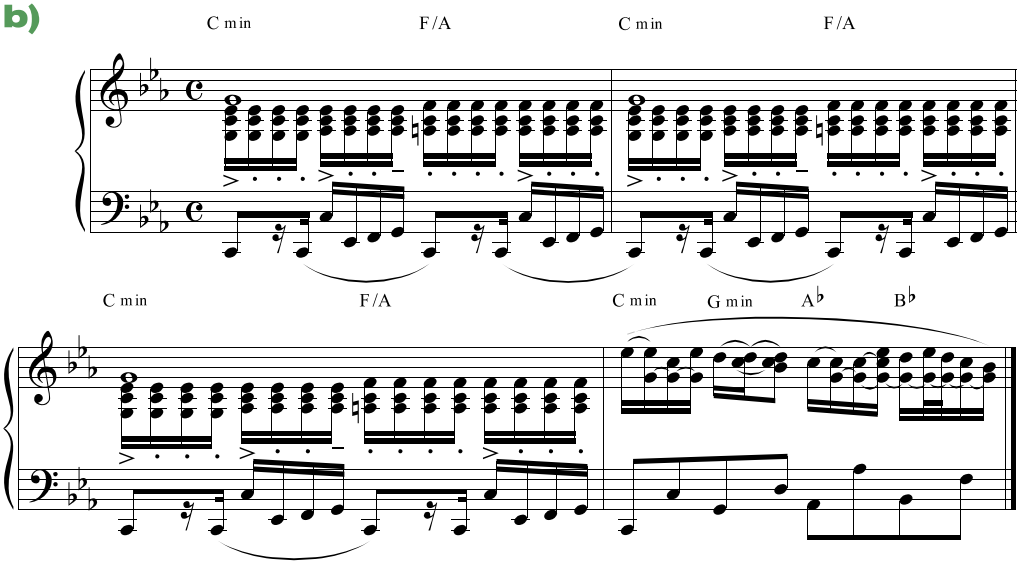

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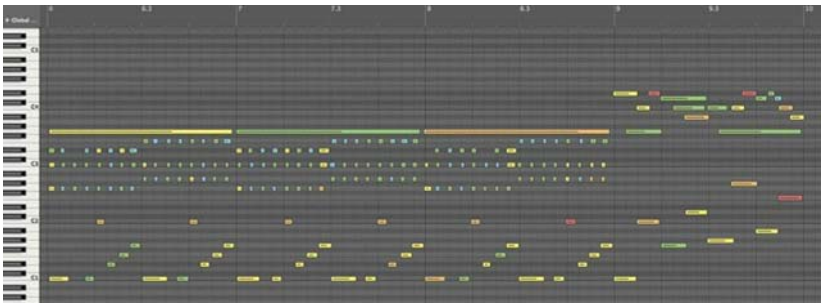

BETH BARTON

Shown here with songwriting partner and spouse Rachel Rossos, former *Keyboard* senior editor **Michael Gallant** is the founder of Gallant Music, a New York-based music and content creation firm whose clients range from JetBlue and the U.S. State Department to Disc Makers and the Bob Moog Foundation. Collectively known as Aurical, Michael and Rachel have released their debut album *Something To Say* on iTunes and at auricalmusic.com.

SOUNDCLOUD

Hear and follow along with the full album cut "Redhead Girl."

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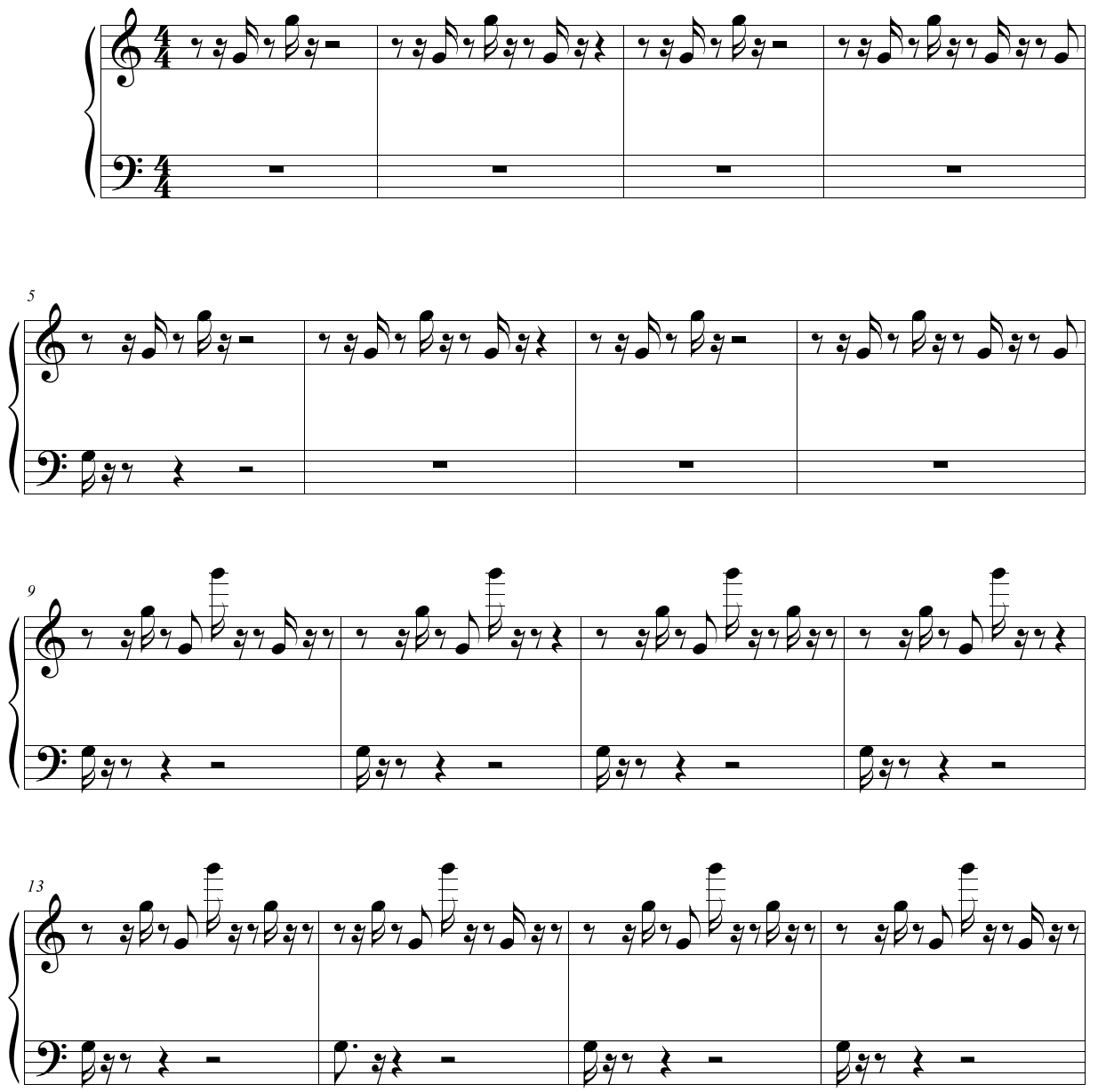
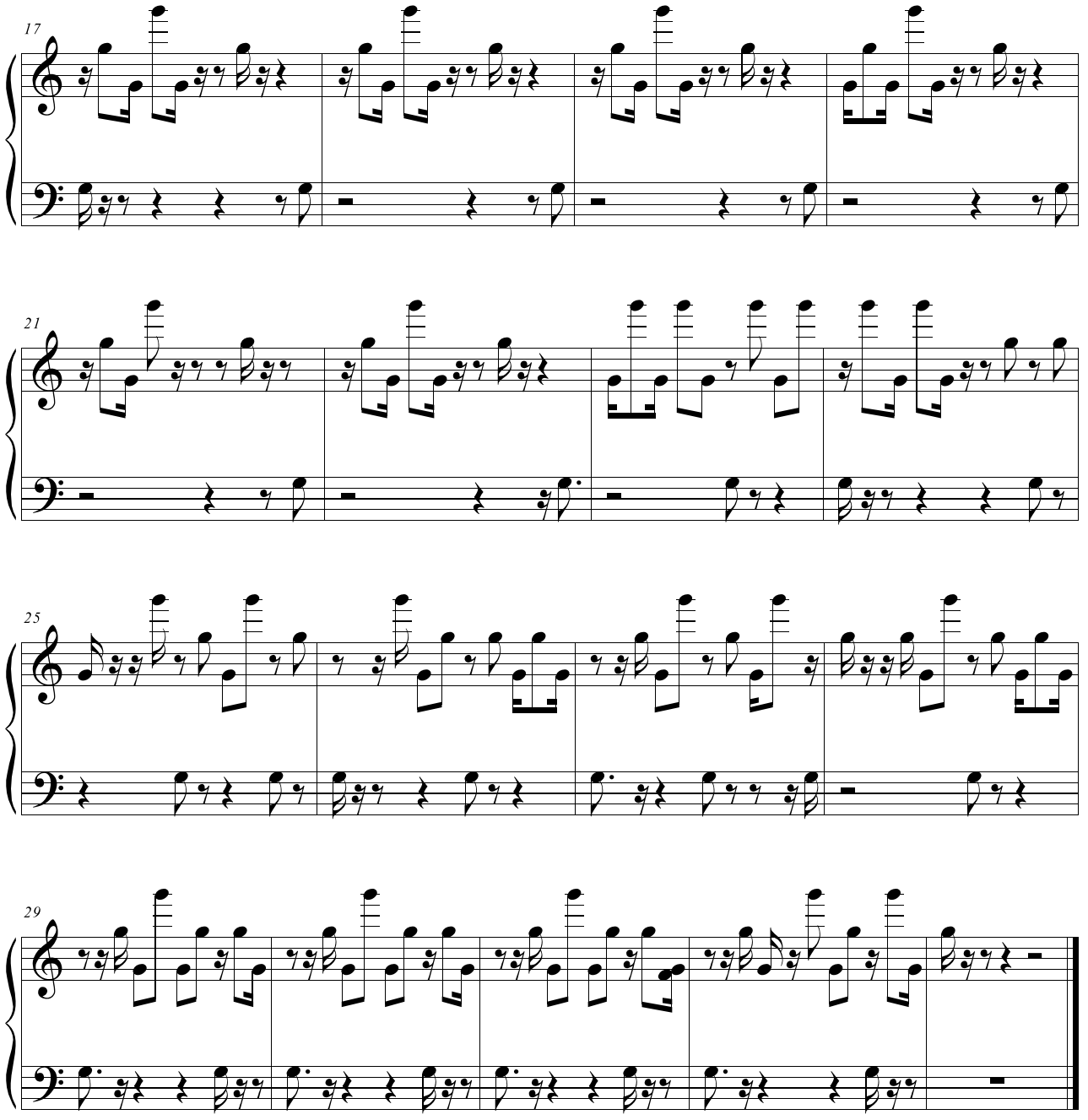
Synth Sense

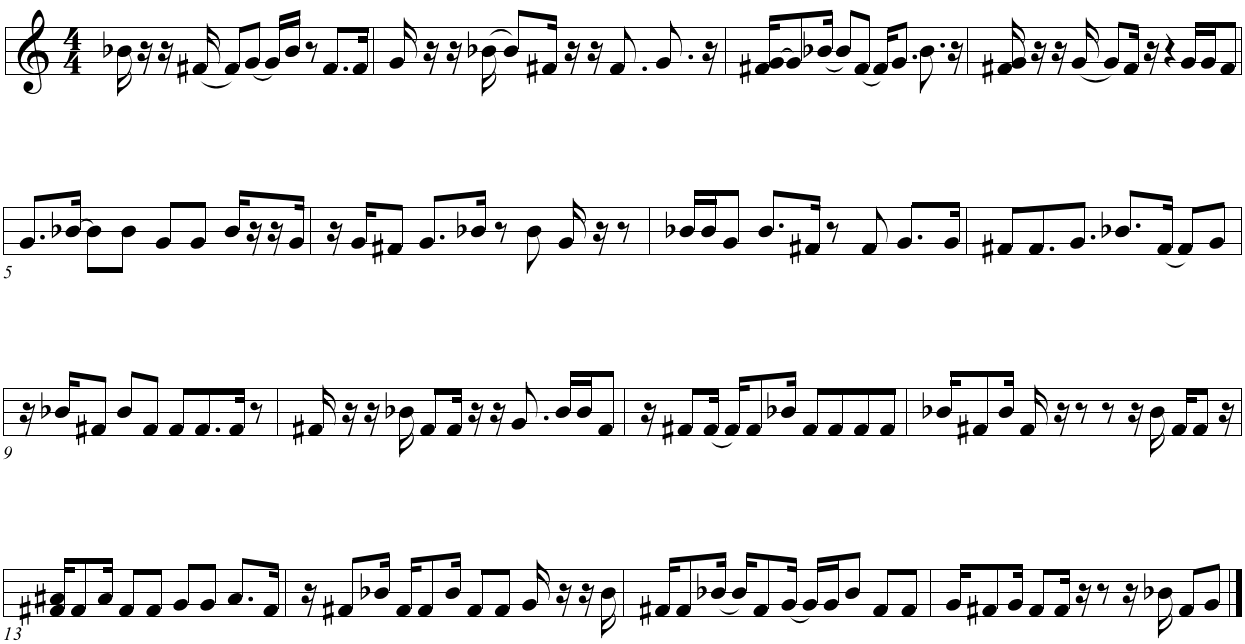
SOLO LIKE YOU'RE COMPING

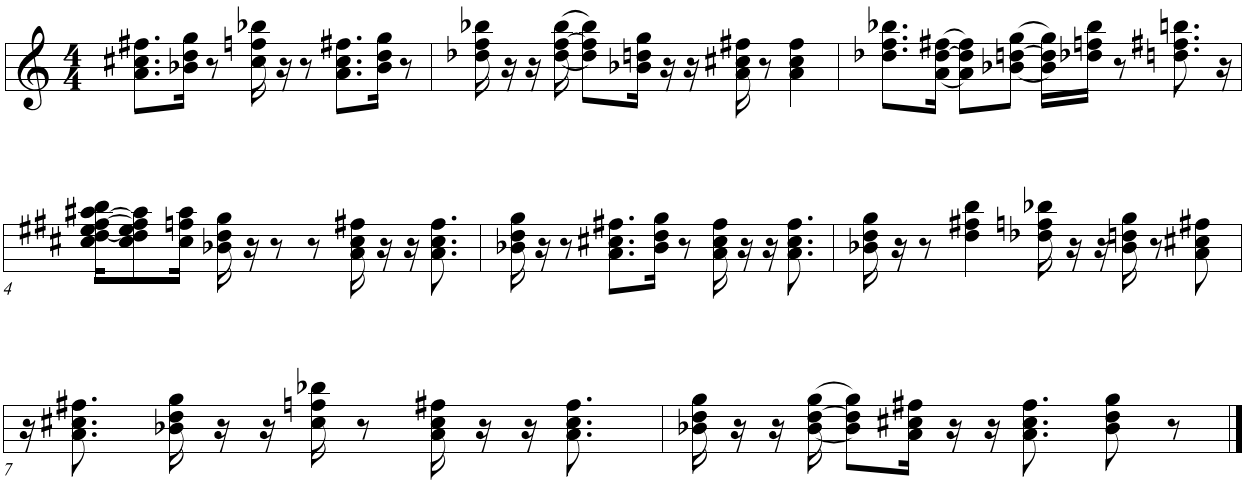
by Didi Gutman

I've long been seduced by electronic dance music, and finding ways to perform it live. One aspect of this is creating solos out of comping. Not traditional melodic solos, but solos that stem from the crafting of parts. This can be great when interacting with a rhythm section or with loops—you can develop just a few notes or chords into an infinite amount of variations. Here are some ideas to get your rhythmic solos flowing. Gear note: Everything in these examples was created with Propellerhead Reason, using Kong, samplers, delays, and Subtractor. Sampling and sound design play a big part in the music I compose and perform.

1. One-Note Solos

Here, I build a solo out of just one note, *G*, in different octaves. I'm using a sample of a major chord, heavily affected with delay, spread across several octaves. I change the pattern every eight bars, and we've printed the whole 33-bar passage to show you the rhythmic evolution.

MAURICIO VELEZ

2. Three-Note Solos

Now I've expanded my solo to *three notes*, (*F*♯, *G*, and *B*♭, in the key of *G* minor), adding rhythmic variations as well. I often use a great deal of chromatic variations in my solos. Remember—since these kinds of solos are played in a percussive way, almost any note can work!

3. Chord Solos

This continues the development of Ex. 2, but instead of single notes, I'm playing minor triads in the same inversions. I'm also adding an extra note (*B*) to the mix as well.

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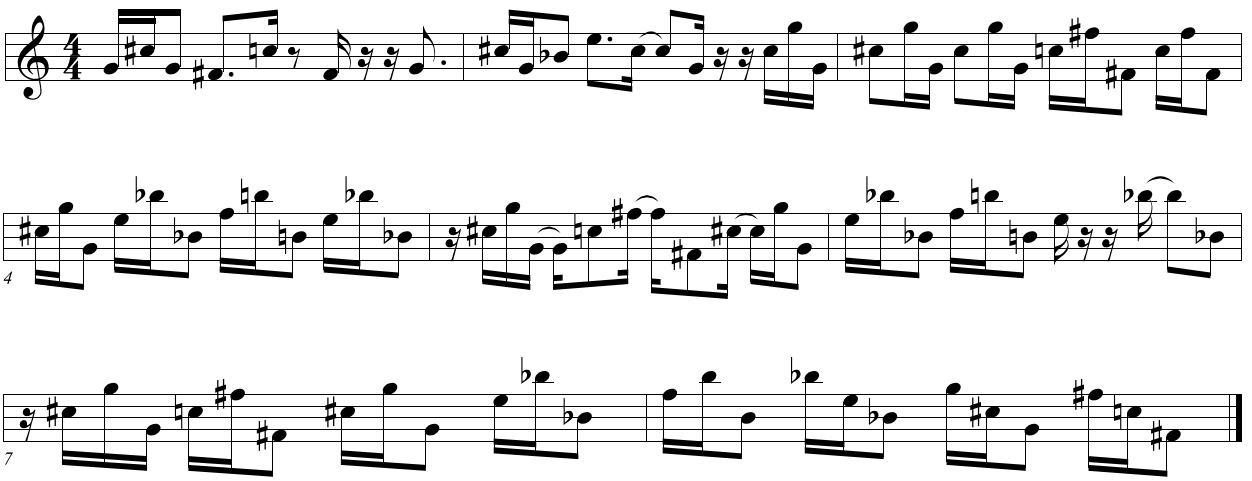
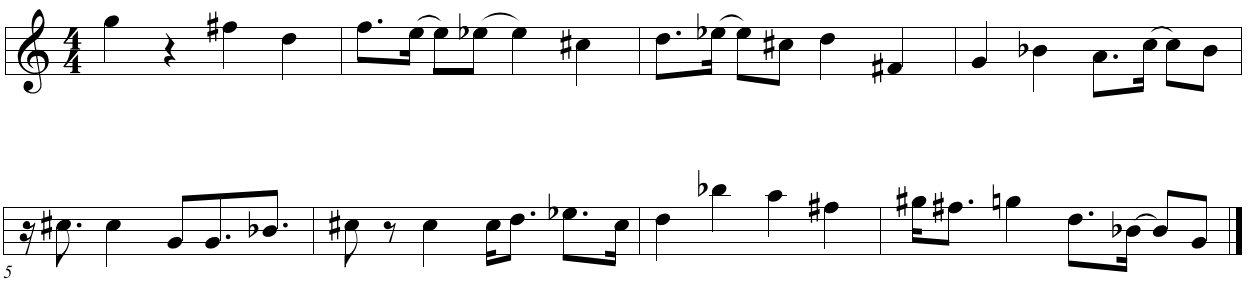
4. Geometric Shapes

Here, I use the same core notes as in the previous example (*F♯, G, B♭, and B*), but I play them using what I call geometric shapes. Here, I'm using tritones (augmented fourths), over an octave range, but you can use anything you like: major or minor seconds, thirds, sevenths, and the like.

5. Any Note'll Do!

Ex. 5 demonstrates how this kind of soloing works with just about any note in the scale. Try building your own solos out of rhythmic comping parts by starting with just one or two quarter-notes. Then, add a third and a fourth note, and alternate between quarter- and eighth-notes. Slowly add octaves and syncopated rhythms, and spread the rhythms between both hands.



MAURICIO VELEZ

Keyboardist, composer, producer, and arranger **Didi Gutman** is best known for his simmering work with poptronica band Brazilian Girls. Gutman has also performed and recorded with Bebel Gilberto, John Legend, Masa, and Brazilian Aliens. Jon Regen

Audio examples.

Video: How Didi Gutman uses Reason.

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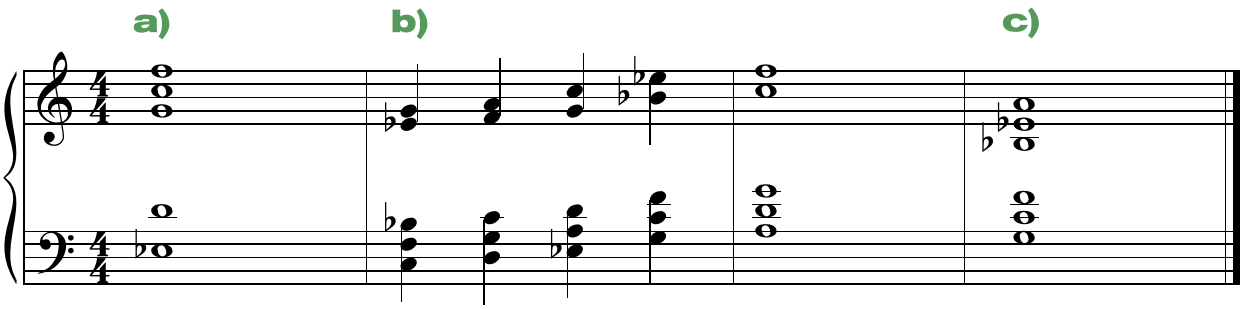
The Chord Doctor

EXPAND YOUR VOICINGS

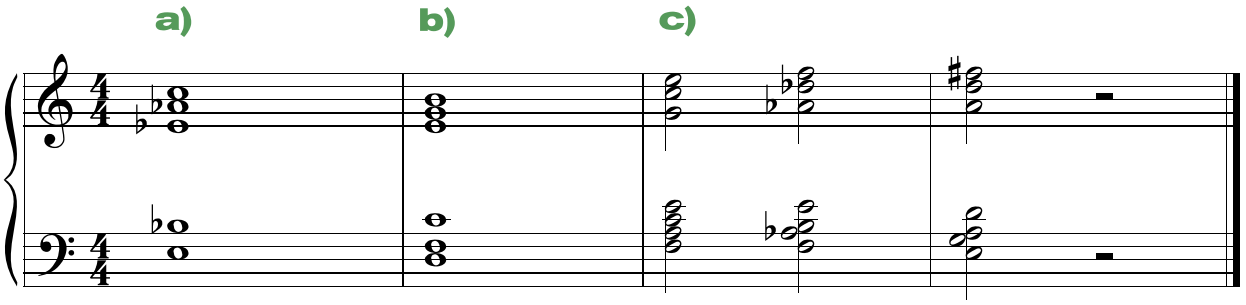
by Brian Charette

You don't have to be a jazz virtuoso to play interesting chord voicings. Here are five techniques to help you turn drab chords into fab chords, expanding your songwriting and arranging toolbox.

1. Fourth Voicings

Ex. 1a shows a voicing for an *Ebmaj13* chord. The left hand includes the chord's root and major seventh and the right hand features a fourths voicing starting on *G*. The upper two notes form the extensions of the 13th (*C*) and ninth (*F*), adding color to the left hand shell. **Ex. 1b** illustrates classic fourth voicings (actually built with fourths *and* thirds) that McCoy Tyner popularized. In **Ex. 1c** we combine two relatively simple fourth voicings, stacking them on top of each other. This voicing, derived from the *C* Dorian scale, works over *Cmin* and *F7* chords.

2. Triads on Top

In. **Ex. 2a** we have an *A*♭ triad over a *C7* shell voicing in the left hand, creating a *C7*♯*9*♯*5* chord. To find this voicing quickly, think about playing a triad whose root is a sharp fifth above the actual root in the left hand. Similarly, starting a flatted fifth above the root yields a ♭*9*♭*5* chord (play a *G*♭ triad over *C* to create *C7*♭*9*♭*5*), and a sixth above the root gives you a ♭*9 natural 13* chord (so, an *A* major triad over *C*). **Ex. 2b** shows a *Dmin13* voicing, built with a *D* minor shell in the left hand and an *E* minor triad in the right–try this the next time you're playing a Rhodes patch through a phaser! **Ex. 2c** illustrates chromatically-moving triads over a traditional *ii-V-I* progression in the key of *C*.



NILS WINTHER

Brian Charette has performed and recorded with Joni Mitchell, Lou Donaldson, Bucky Pizzarelli, Michael Bublé, and Rufus Wainwright, in addition to leading his own jazz groups. His latest album *Learning To Count* is available on Amazon and iTunes. Visit kungfugue.com for more info. Jon Regen

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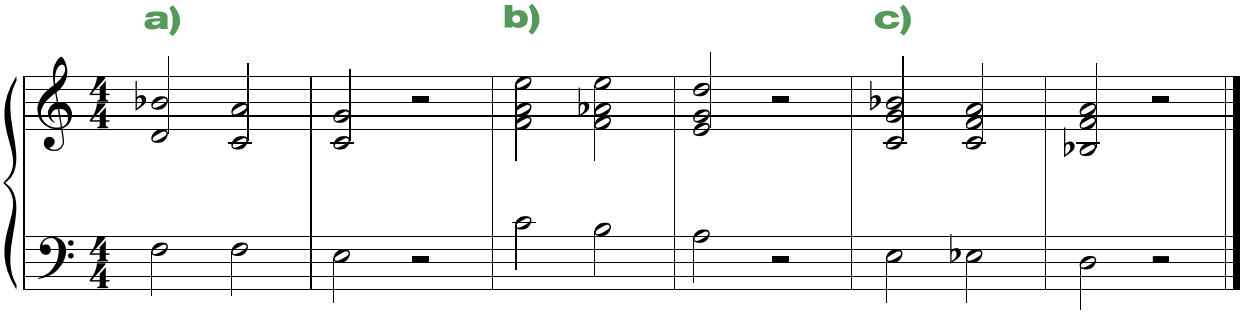
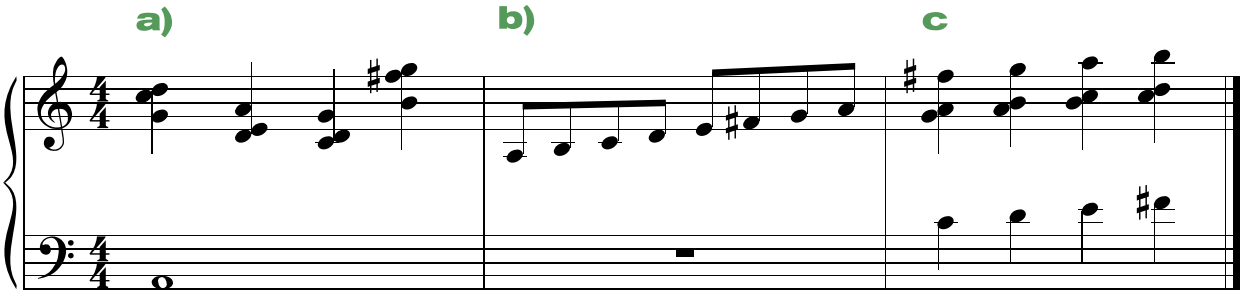
3. Drop-2 (or 3) Voicings

The progression in **Ex. 3a** (*B♭, F, C*) opens up dramatically when we take the second voice from the top and make it the bottom note of our chord voicing. This is called a "drop-2" voicing, and it's a great arranging trick for horn and string parts. **Ex. 3b** presents the left hand part of **Ex. 2c** in a drop-2 style, which adds space and movement. **Ex. 3c** demonstrates *drop-3* voicings by taking the third note from the top and making it the lowest. Here, we play *C7-F7-B♭maj7*.



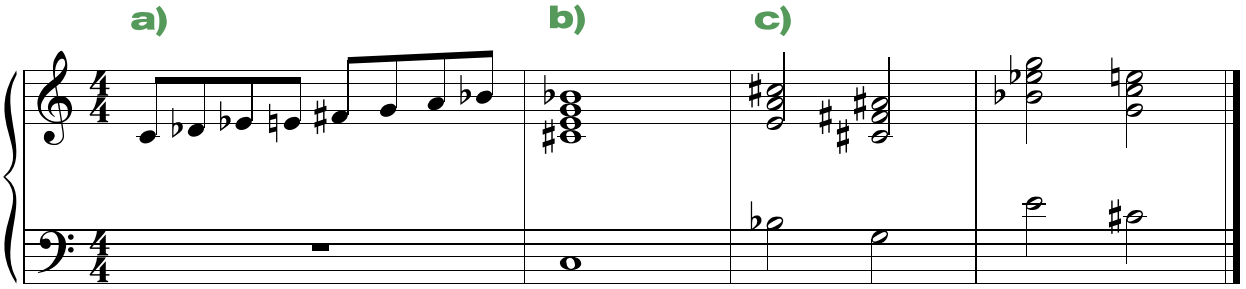
4. Clusters in a Mode

In **Ex. 4a**, by simply picking notes from a particular mode and playing them together, we can create interesting colors. Try pedaling an *A* in the bass while playing these unusual *A* minor shapes. **Ex. 4b** illustrates the *A* Dorian mode, used exclusively here. **Ex. 4c** has more open-sounding voicings, built by making clusters out of the *A* Dorian scale, and employing the drop-2 techniques from Ex. 3.



5. Diminished Chord Tricks

Ex. 5a illustrates the *C* half-step-whole-step diminished scale, which can be used over a *C7* chord. **Ex. 5b** shows a *C7♭9* voicing, derived from the scale in **Ex. 5a**. **Ex. 5c** demonstrates a great diminished chord trick: playing triads a half-step below the right-hand chord tones in **Ex. 5b**. This creates dense, altered voicings, and works great on Clavinet over a *C7* funk jam.



Audio examples.

Video: Brian Charette live in Slovakia

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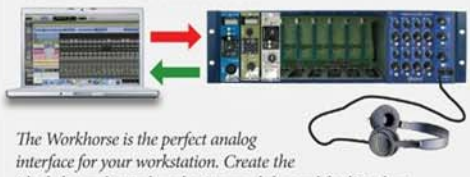
Workstation Interface



The Workhorse is the perfect analog interface for your workstation. Create the ideal channel strip by selecting modules and feeding them together then audition the mix without latency with your nearfield monitors or via the dual headphone outputs.

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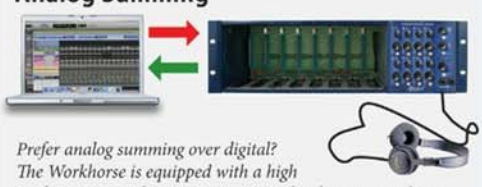

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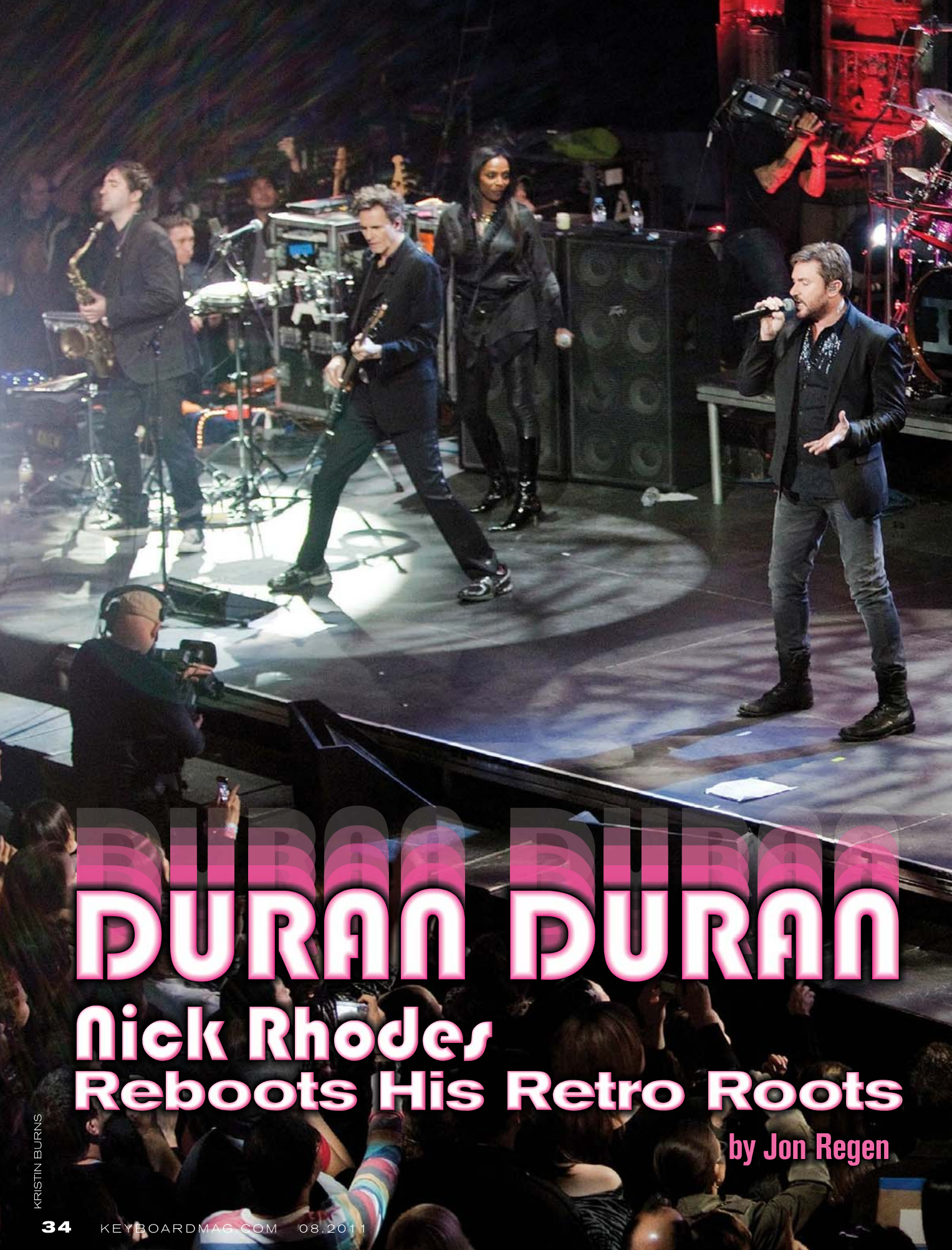

DURAN DURAN

Nick Rhodes Reboots His Retro Roots

by Jon Regen

KRISTIN BURNS

STEPHANIE PISTEL

"I realized many years ago that the longer an act is around, the rarer it is that they make a seminal album late in their career," says Duran Duran's keyboardist Nick Rhodes. "With *All You Need Is Now*, we were determined to defy that. On every level."

Nick Rhodes has stood at the forefront of modern electronic pop music since ushering in the arpeggiator age with Duran Duran's breakout album *Rio* in 1982. Rhodes' signature synth work helped engineer the British band's three-decade ride atop the pop charts, selling over 100 million records. From early mega-hits like "Rio," "Hungry Like the Wolf," and "Save a Prayer," to later successes such as "Notorious" and "Ordinary World," Rhodes' effect-soaked synth strings and percolating arpeggios have been a common thread.

With the release of the band's 13th studio album *All You Need Is Now*, Rhodes and company return to the sound that started it all: a sinewy stew of rock, funk, and electronica that can only be Duran Duran. Nick took the time to tell *Keyboard* exactly how he marshaled the sorts of synth sounds that made the band famous into a true musical revival.

So many bands seem to run from the sound that made them famous, but you and the band seem to run *towards* it on *AYNIN*.

Well, on the last album [*Red Carpet Massacre*], we worked with some pretty extraordinary producers like Timbaland, Justin Timberlake, and Nate Hills, all of whom were making really successful, interesting, modern dance music with computers. I think what we really set out to do was to make a hybrid of the Timbaland beats with the Duran Duran sound. But this involved a lot of time in the studio playing with computers. They didn't really use a lot of live instrumentation, which we've *always* used, despite the fact that we use a lot of synthesizers and computers. So, while we achieved what we set out to do with that record, I don't think it really translated to our audience, nor do I think it was a particularly outstanding Duran Duran album, even though artistically we managed to do something a little different.

So when we got to this album, we realized we had been down that alleyway with computers and trying to make a modern dance record, and that we were better at doing the things that people perhaps know Duran Duran for, some of which were things that we hadn't touched on for a long time. Then, [producer] Mark Ronson came into the picture and immediately said, "What you need to make is a classic Duran Duran album." He told us, "I know you don't like looking backwards, but I don't think it is that *at all*. You've got to realize that a lot of the contemporary artists out there right now have been borrowing and nicking things from your sound compendium for years, and they're having huge success with it! You're just avoiding looking at and using the things that you know how to do better than anyone else out there!" So it really came down to some fairly simple things—like using *analog* synthesizers. There are barely any digital synths on the album, give or take a few samples. So I got out all of the keyboards I've had for many years, and even bought some new ones. That was at Mark's insistence.

And with [lead singer] Simon [LeBon], we decided to layer his vocals a lot more with his own harmonies, and stack them up, which is something we did quite often on the first three or four albums. With [bassist] John [Taylor] and [drummer] Roger [Taylor], we turned to very solid dance grooves, but based more in disco and funk than in electronica. For guitar and Dom [Brown], who has been with us for several years, we wanted to keep it raw and edgy and rock-based. That was really the manifesto for the album.

So, the return to the sound of an earlier Duran Duran era was aided by a return to the gear of that era?

Well, I've always used analog synths on virtually every album we've ever done, with the possible exception of *Notorious*, which has very little analog on it. I had started to move into digital technology more at that time, as I had a Fairlight and Nile Rodgers, who we were working with at the time, had a Synclavier. We were all enthralled with digital sampling and having massive sound libraries. So at that point I started switching over more to digital, although I never completely let go of analog. I always mixed in some of it because while I do quite like some of these super-slick, digital, THX-sounding kinds of things, they don't evoke the same emotion as analog synths. There's something about an analog synth that's more closely related to a guitar.

There's beauty in the imperfection. . . .

Yes. Completely. And there's something about the fact that they're *wilder*. You have to sort of get them under control, and fiddle with them manually to make them do what you want them to. Whereas with a digital sound, people just tend to keep clicking through them until they find something that works. I much prefer to make my own sounds. Even if you're only changing something slightly, I firmly believe that those are the things that make records special. What was so incredibly exciting and inspirational in the early '80s when I was making the first Duran Duran records, was that the synthesizers coming out at that time by Roland and Korg and Moog were completely unique. Each one had a sound all its own, and that really enabled people to make extraordinary records with synthesizers. The possibilities were endless.

Take us through some of the analog gear used on the album. For instance, on "Leave a Light On" there's an affecting lead sound in the intro.

[*Laughs.*] Funny enough, that's one of the few digital sounds on the whole album. It's actually from the Roland V-Synth GT. I found that sound in the beginning when we were writing the song, and fiddled with it a bit, changing some delays around on it. I just liked the sound and came up with the major theme in the song. Simon instantly fell in love with it and started singing along with it, and we finished the song almost within a day. My intention was to replace that sound with an analog synth, but it just fit—it was the glue that pulled all the sonics of the song together. So what I did was play the line in different parts of the song on different sounds. I play it on the V-Synth GT, on an Elka Synthex, I think also on a Jupiter-8, and on some string samples in the end section. But the main sound that you hear in the beginning was from the V-Synth GT.

So you're taking a theme and you're changing the sounds and synths on which you're playing it during the song?

D'RIG DURAN

KRISTIN BURNS

Long known for imposing stacks of synths that included the Fairlight CMI and Roland Jupiter-8 (see "Time Machine" on page 66 for a look back at those), Nick Rhodes now plays a streamlined rig that still captures his vibrant, vintage sound.

"We used to take the Jupiter-8s and the other vintage keyboards on tour with us," Nick says, "and that really *was* an ideal world, because everything was right there at my fingertips, and I could change things around on the spot. That was the real deal. Now that it's much harder to tour with old, analog gear, we've spent an extensive amount of time sampling all of my original sounds at a very high rate—some of them directly from the master tapes. Other sounds, I had to re-create, but because I still have those original instruments, or in some cases I actually re-bought them, we've painstakingly gotten those sounds as close to the originals as possible."

Rhodes' rig for the *All You Need Is Now* tour is based around four keyboards that run in conjunction with numerous rack modules, effects, and software. Rhodes gave us an insider's view of his setup, commenting on how each piece of gear helps craft his storied sound.

Roland V-Synth GT: "I use one of the two V-Synths for newer, digital sounds. For instance, there's a breakdown in 'Girls On Film,' and I've found three or four digital sounds on the V-Synth I really like for it, even though they're not on the original record. I use the other V-Synth mostly for samples, like the sound on 'Save a Prayer,' which is a sample of the original sound."

Alesis Andromeda A6: "I use the Andromeda for things we haven't sampled–sounds that are fairly simple, like synth basses, for example. It lets me get amazingly close to the original sounds I used. Plus, it's incredibly stable and roadworthy, and gives me that fat analog sound I'm looking for. I use it a lot for strings."

Kurzweil K2000: "It's used for triggering samples, mostly sound effects and sounds for songs like 'Come Undone,' the flanged sound that starts 'Planet Earth,' and the camera sound from 'Girls On Film.' I also trigger sequences from it as well."

Akai S6000: "It's purely used to generate the sampled sounds for the V-Synth and the K2000. We've used it for several years, and never bothered to update because it's proved to be extremely robust."

Korg MicroKorg: "I use this for the Vocoder only. It's actually quite powerful. We plug it straight into my main microphone and use it for songs like 'Wild Boys' and 'The Reflex.' I considered that I should only ever talk to the audience through the Vocoder, but haven't got around to that yet!"

MOTU MIDI Timepiece: "We're moving to [Apple] MainStage from this, but it's been incredibly reliable for patch changes, and for live use, that's top-of-the-list. Plus, it's very simple to use. A song like 'Rio' has four different sounds on one synth. So instead of splitting them up between keyboards, I just switch between them."

Effects pedals: "I used Boss and MXR phasers early on. The Boss phaser is particularly good, and it has sweeps that I can control at the rate I personally like. For instance, the string sound on 'Girls On Film' was originally played on a Crumar Performer. Now I'm playing it on the Andromeda. On the last verse it has a phaser on it, so I just click it in at that point. It's always nice to have a phaser and a flanger at your feet. You never know when you'll need it. If I'm in a radical mood, you might get all kinds of things flanged all night! I also use the [Danelectro DE-1] Dan Echo Delay for things like the rhythmic verse part on 'Rio,' then the Boss flangers on the Andromeda and the V-Synth I use for samples. I love the motion that flangers put into certain sounds. You'll hear them on older songs like 'Hungry Like the Wolf' and the end of 'Save a Prayer,' as well as a lot of the new songs like 'Being Followed.'"

Apple MainStage: "When Apple gave me a demo of MainStage a few years ago, I was pretty blown away. We're slowly moving everything over to it, programming all the sounds for every single song into it. It's an incredibly powerful system. I'm obviously slightly apprehensive to change over, as I'm so used to my system and everything usually works. Eventually, I'm hoping to control MainStage from an iPad, and just click through the pages for each song. We used to dread playing certain songs live back in 1981, because I'd have up to 30 changes that all needed to be done manually. I'd literally be turning the resonance down, and the filter cutoff up, and the attack down. Things have come a long way!"

Yeah. That's often what happens in classical music. I've long loved listening to classical music, and I find myself listening to it more and more when I'm on my own now because I just love the arrangements. That's one of those beautifully simple tricks that is often deployed in classical arrangements—first a theme is played by the strings, then it's played by the French horns, and then by the celeste. And by doing that, it almost feels like a new melody, yet you're drumming the same thing into people's subconscious. You're keeping the melodic structure of the song, yet you're making it feel different all the time.

On "Safe (In the Heat of the Moment)" there are what seem to be your signature, stringy, sustained pads. Is that the Roland Jupiter-8?

Yes. I really tried to use things I had used before. I even referenced the same banks that I have always built pads from on the Jupiter-8.

Was that the original Jupiter-8 unit from Duran Duran's heyday?

I actually have *three* Jupiter-8s. The reason I have so many is that we used to take them on tour until about eight years ago when I had to retire them. Every single day when I would arrive at the gig for sound check, my technician would be doing open-heart surgery on one of the Jupiters and plundering one of the other ones for a chip! They were pretty roadworthy for the first ten years or so, but as they get older they get fragile. But another thing I love about them is that each one sounds slightly different. On some of the new album I actually use the Jupiter-8 I recorded "Rio" on, and on other tracks I use the one I didn't use until *The Wedding Album*.

On the song "Mediterranea," there's a sort of bubbling, arpeggiated track in the background. What was that created with?

That is actually a pulse. I pulsed it from a cowbell, sort of old school style, like I would have done on "Union of the Snake," or "Is There Something I Should Know," and it's actually the Elka Synthex. There are a lot of layers of Synthex on that particular song—all the beautiful, soft bell tones. It's particularly good for those.

What other instruments did you dig out of storage for use on *AYNIN*?

One of the things I literally hadn't used for years was the EDP Wasp synthesizer, which was actually the first instrument I ever bought. Sadly, my original Wasp got lost somewhere along the way. Probably about ten years ago, I decided I was going to buy another one, and I bought a customized hybrid—one that had the Spider sequencer in it.

I got the Wasp out because it doesn't sound like anything else. It really does have a unique character to it. You can hear it in the beginning of "Being Followed." It's that strange, slightly buzzy sound. I also used it to create some of the sequences on "Blame the Machines." I also used the Minimoog Voyager on a lot of the album. I never actually had an original

Official Video: "All You Need Is Now."

Video: Nick Rhodes talks about his favorite synths.

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Minimoog. I used one on several records. But when the Voyager came out I wanted one *immediately*, because it's a dream to have a Minimoog with completely stable oscillators, and to have the touchpad in the middle, and have MIDI and all those options. So I use it extensively, especially for bass, percussive, and white noise sounds.

There's also a return to that kind of funk bass and drum groove that John and Roger do so well. How did that funk-meets-disco element originate?

It was very much John and Roger. I wouldn't swap our rhythm section for anybody else's in the world. They're an incredible unit. They're so tight—the way they play together live. You just feel confident because they're so locked. They're adventurous, too—they can come up with ten funk/disco grooves per minute!

KRISTIN BURNS

The new album really does sound like a *celebration* of the classic Duran Duran sound. That musical language that your band codified really shines through.

Sometimes the simple, beautiful things are the things that mean the most, but they're not always the easiest to create. They are when you're young and when that's sort of the only thing you can do, but then you start to learn more and try out new things, and loads of new gear arrives and you start fiddling around with it. In my case, some of the old synths ended up in storage for years. . . . So you *lose* elements of what makes that sound. Sometimes you think that experimenting is the right thing to do, or the *braver* thing to do. But with this album we actually realized that we had spent the last two decades or so trying out different sounds on every record. And somehow things have come around in a full circle, and the thing that seemed most right of all was to look back for the first time at the early albums and see how we could make that sound contemporary.

I have to say that once we started playing together and writing the album, we found our 'Duran Duran-ness' again. It all seemed so obvious, and some people said, "If you could still do this, why didn't you do it years ago?" The simple answer is, obviously we *couldn't* do it years ago. It might have been staring us in the face, but we hadn't noticed it. I suppose I could cite Picasso, who said he spent his entire life learning how to paint like a child again. I really relate to that. k

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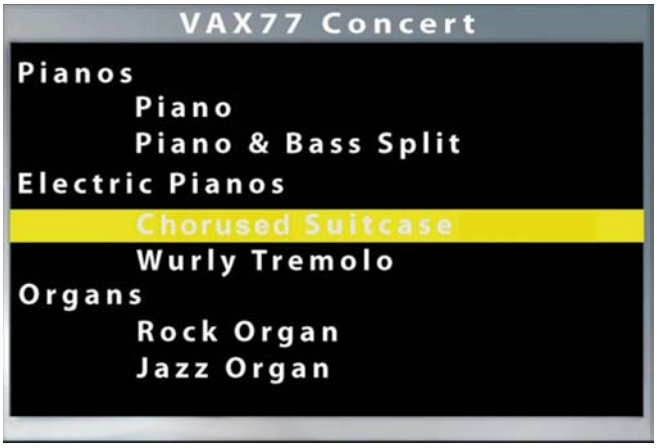
Synth Workshop

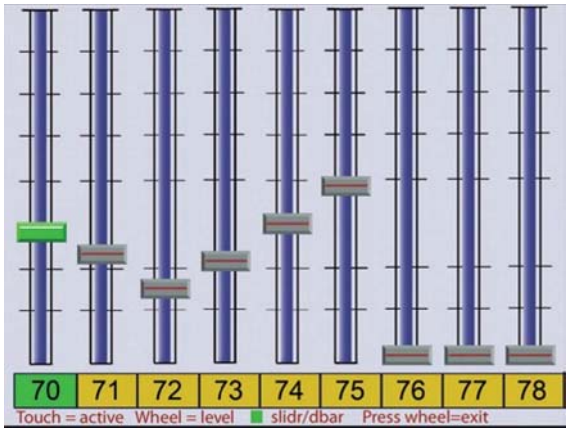
VAX-77 POWER TIPS

You may have read the *Keyboard* April 2010 review in which the fold-in-half Vax-77 MIDI controller won a Key Buy, or perhaps you own one. Recent advancements increase control for keyboard players using soft synths onstage and in the studio. Here's how to change programs in Apple MainStage and on the Muse Receptor, right from the Vax's touchscreen, plus setup tips for splits and layers, hi-res MIDI velocity, and polyphonic aftertouch. Matt Wiedemann



Apple MainStage

With the Vax connected to your Mac via USB and in Host Control mode, the Vax touchscreen is populated with the list of available patches from your MainStage concert, similar in appearance even down to the yellow highlight bar. You can then select individual presets by touching the name of the patch you want to play on the screen. This is random-access and gives you freedom to move or even hide the computer up to ten feet away with a single USB cable, or up to 150 feet with certain USB MIDI extenders.



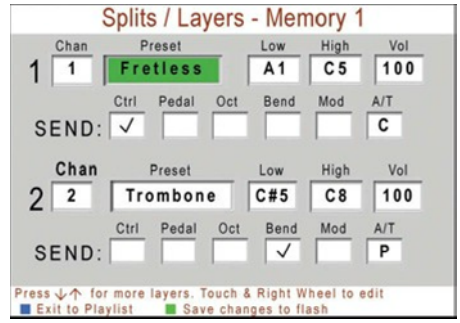
You access the Vax's touchscreen sliders by one press of the right-side wheel. They automatically map to MainStage's patch, effects, and EQ controls in the Workspace window, all via preset MIDI CCs. These virtual controls, as well as an organ drawbar mode (down is louder), wheels, any pedals you plug in, and the uppermost "hot key" on the keyboard are assignable by the Learn function in MainStage.

Muse Research Receptor

Channel Selector (shown) is the simplest approach. It's the initial screen in Host Control mode, and works much the same as with MainStage, except that channels are listed by number, not patch name. You can touch-select the corresponding 16 host channels in the Receptor's mixer; other channel-change options include the Vax hot key, wheels, buttons, and assignable pedals. Receptor Mode is an alternate approach. It lets you see all the patch names from your Receptor plug-ins, as well as automate the Receptor's bypass function. You can audition all presets by name while putting all other plug-in channels on standby, which lets the Receptor focus its CPU resources on the synth you're currently playing. You do have to import your Receptor patch-and-bank XML file into the Vax-77 Patch Librarian program, then load the desired patch lists into the Vax via USB. Once you do, though, you can access all plug-ins and sounds without reaching for the Receptor.

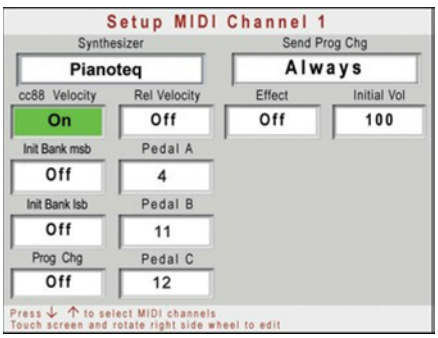
Splits and Layers

Quicksets (left) are the preferred Vax mode for building splits and layers across multiple MIDI channels. Within the Vax, splits and layers can be saved to the 128 Quickset slots, displayed and touched eight to a screen, and include controller filters for each of the component patches (right), including polyphonic aftertouch per preset.



Polyphonic Aftertouch

Poly-AT (for short) is implemented on a growing number of soft synths, such as Spectrasonics Omnisphere 1.5 (see page 54 for the full review) and Arturia's "V" family. Poly-AT is easily enabled on the Vax: Once selected in the Effect box on the main setup screen, the physical Effect button toggles it on and off. Mapped to filters, vibrato, or even pitch-bend, the Vax's poly-AT lets you accentuate individual voices within polyphonic chords, and adapts to the type of musical passage you're playing.



Hi-Res Velocity

Modartt's Pianoteq virtual piano now responds to high-resolution MIDI velocity, which the Vax can transmit. You can enable the MIDI CC88 prefix on a per channel basis; the tenfold increase in velocity resolution (approximately 12,000 gradations as opposed to the usual 127) transmits an unprecedented level of expressiveness and dynamic control, to which Pianoteq accurately and musically responds.

Matt Wiedemann is director of marketing at Infinite Response. For more on additional Host Control platforms, visit infiniteresponse.com or call the company's chat line at 512-535-5599.

Video: Vax controlling MainStage at NAMM.

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Steal This Sound

GARY NUMAN'S "CARS"

Longtime *Keyboard* readers may recall that way back in July 2006, I took a crack at the infamous Polymoog "Vox Humana" patch made famous by Gary Numan (and got it pretty close). Replicating this swirly string/vocal pad has been forum debate fodder for years, and the general consensus is that the Polymoog's unique "resonator" filter section is responsible. But recent research into the Polymoog's voice architecture revealed that it's the only vintage polysynth with three independent LFOs: one for each oscillator's pitch and a dedicated LFO for one of the oscillator's pulse width modulation. Modulating all three is the secret of the "Vox Humana" warble! We'll re-create it with Arturia's Jupiter-8V virtual synth, but you can use any virtual analog with three independent LFOs. Mitchell Sigman

Step 1.

Choose a saw wave for VCO-1 and a pulse wave for VCO-2. Set the range to 8' for both. Detune VCO-2 a tiny bit, and set the oscillator mix at equal volume for both oscillators.

Step 2.

Set the LFO to a sine (or triangle) wave with a rate of 5.72Hz. In the VCO Modulator section, set the PWM slider to 0.625 and the source switch to "LFO." This routes the LFO to modulate VCO-2's pulse width for animation.

Step 3.

Set the VCF cutoff frequency to 1,986Hz and resonance to zero. I used a 12dB slope for a little more brightness. Set "Key Flw" (key follow) to 0.75—this makes the sound brighten as you ascend the keyboard.

Step 4.

Set ENV2 as follows: attack at 453ms, decay at zero, sustain at full, and release at 4,942ms. Remember to turn up the ENV2 level in the VCA section or you won't hear anything.

Step 5.

Now for the secret sauce. Access JP-8V's extra LFOs by clicking the Open button in the upper right corner, then click the Modulations tab. Set both LFOs to a triangle wave. Set one to 5.04Hz and the other to 3.5Hz—these exact settings aren't crucial as long as they're different. In the Y Output, set the top pop-up menu to "VCO1 Pitch" and the amount knob to 0.084. In the X Output, set the top pop-up menu to "VCO2 Pitch" and the amount knob to 0.052.

That's it! You can add delays or reverb, but the patch stands up pretty well on its own.

SOUNDCLOUD Step-by-step audio examples.

Download this patch for Jupiter 8-V from the author's site.

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Longtime contributor Francis Preve (shown onstage) worked at Nemesys on the original GigaSampler, has served as technology editor of electronic dance music hub beatport.com, has designed sounds for Ableton, Korg, M-Audio, and Roland, and just launched his own EDM record label, Academik. Find out more at academikrecords.com.

Dance

SIDECHAINED GATES

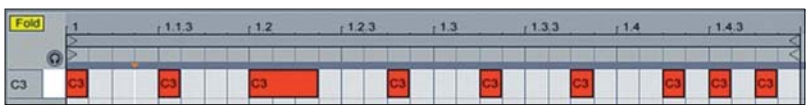
Sidechained compression is a classic production trick in modern dance music, but compressors aren't the only processing tool that can be sidechained. In fact, many producers overlook the fact that gates and expanders also include sidechain inputs. That's a shame, because sidechained gates are actually a rather flashy way of adding rhythmic intrigue to pads and vocals. The overall effect is much like the turntablist's trick called "transforming," where the DJ rapidly cuts the volume of a track in rhythmic fashion. By using a gate that's sidechained from a percussion source or soft synth, you can "pulse" the audio in really funky ways. Here's how. Francis Preve

Step 1.

Find a track with a sustained or flowing passage. Vocals and pads are excellent choices for this technique. For this tutorial, we used a snippet of Meredith Call's vocals from *Josh Gabriel Presents* Winter Kills' recent dance hit, "Hot as Hades."

Step 2.

One of the best rhythmic resources for sidechained gates is grabbing a percussion loop from your existing drum mix, so as to reinforce the groove. Here, we used a top loop from Loopmasters' *Joey Youngman* collection. From there, we apply the gate to the vocal and select "JY Loop" as the sidechain input source.



Step 3.

For even more control, you can use a soft synth as your sidechain input source. In this case, the rhythm of the MIDI notes you play on the synth track will be used to gate the vocal. It's worth mentioning that the shape of your amp envelope really affects the feel of the gating. In this example, we used an immediate-on, immediate-off organ envelope for Ableton's Operator, which then gates the vocal.

SOUNDCLOUD Step-by-step audio examples.

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BEYOND the BLACK 'n' WHITES

Controllers for Alternative Scales

by Jim Aikin

There's nothing sacred about the arrangement of black and white levers that we know as the keyboard. It's a very good musical interface for some purposes, not so good for others. The keyboard assumed its present configuration of seven white keys and five black keys per octave near the beginning of the 16th century, and has become such a universal gateway to all types of musical performance and production that it's the reason this magazine exists. But if you're exploring unusual types of music, you may want to consider using an unusual keyboard. I recently evaluated three such instruments that make playing alternate tunings and microtonal scales easier. Before looking at them, let's explore why you'd want to do this in the first place.

Tuning Systems

Many books have been written about alternate tunings. (I recommend *Harmonic Experience: Tonal Harmony From Its Natural Origins to Its Modern Expression* by W. A. Mathieu.) Briefly, the three main branches of the tuning tree are historical and non-European tunings, equal temperaments, and just intonation. A terrific resource for exploring these is the free Scala software available from huygens-fokker.org/scala. Using Scala, you can create any tuning you imagine, export it as a TUN file, and load it into a variety of software synthesizers.

Just intonation. Just intonation is not a single tuning but a vast family. What all its members have in common is that the intervals are based on the whole-number ratios in the overtone series. A perfect fifth, for instance, is a frequency ratio of 3:2. A just major third has a ratio of 5:4. Some of the intervals in a scale based on just intonation will sound sweet and pure, while others may sound quite piquant or downright discordant. Some of the intervals will always be larger than others, so transposing a passage to a different key will change its quality in subtle or drastic ways. Just intonation scales can have as few or as many steps per octave as you like, which makes playing them on a 12-note-per-octave keyboard quite a challenge.

Equal temperament. In an equal-tempered scale, the ratio of pitches between adjacent keys is always the same, so you can transpose passages freely without changing their character. The octave (or some other interval, such as an octave plus a perfect fifth) is divided into

some number of equal-size steps. Some equal-tempered scales, such as those with 12, 19, and 31 notes per octave, have intervals that are close to the perfect ratios of just intonation. (The 31-note scale is especially good but difficult to play on a 12-note-per-octave keyboard.) Other equal-tempered scales are more exotic, with tilted, dissonant thirds and fifths that resolve badly or not at all.

Why 12?

Musicians are always searching for fresh sounds. Yet for the past 250 years, one thing has remained the same: the 12-note-per-octave, equal-tempered scale. Ever wonder *why* this is the case? The reasons are buried in history.

The earliest European keyboards (which were basically just banks of levers connected to bells or organ pipes) had only the white keys, plus *B*♭. Using these keys, you can play the modes of Gregorian chant. Sometimes the *B*♭ was a black key, but on other keyboards it was at one end of the octave while the *B natural* was at the other end. That's why some archaic note-lettering systems refer to *B*♭ as *H*.

As the music of the Middle Ages became more complex, more black keys were added. But the intervals were not quite what we're most familiar with today. Intervals from just intonation were the norm. When composers wanted to modulate temporarily to a distant mode, they needed black keys that would make proper intervals in that mode. *A*♭ was not the same as *G*♯, so some keyboards were built with split black keys, but these were difficult to build and play. As a result, compromise tuning systems were developed, which gave composers more options without the need for split black keys.

Our modern 12-note equal-tempered scale was the final compromise, and it has endured for more than 250 years, so it has been a good one—but it's not perfect. The major third in 12-note equal temperament is about 14 cents too wide compared with the natural 5:4 ratio of a major third in just intonation. (A cent is one 100th of an equal-tempered semitone.) Our major thirds are somewhat bright and jangly, which may account in some small way for the restless, unsettled quality of the music written since this tuning was developed. Maybe composers and performers liked 12-note equal temperament because the culture they lived in was restless and unsettled from top to bottom. Now, we can explore other tunings with remarkable ease. Starting in the early 1980s, many synthesizers included user-programmable tuning tables. In the past few years, soft synths have made it easier than ever to explore the vast sonic resources of tunings. Anything from sweetly in-tune 11th chords to bizarre scales from outer space can be set up in just a few minutes.

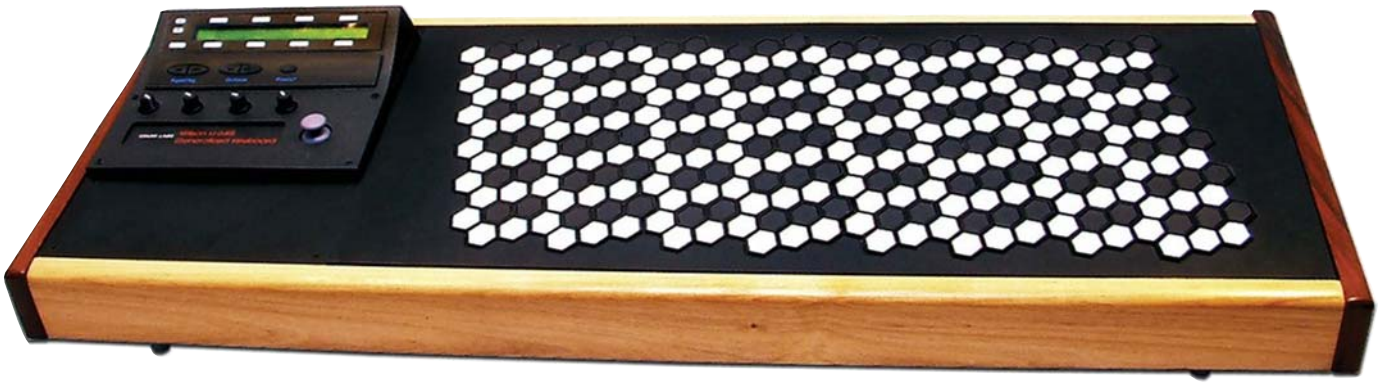
Other Scales, Other Keyboards

One thing hasn't changed, though: You'll still be using a conventional MIDI keyboard. As long as you're content to play music that uses a fixed set of 12 pitches per octave, that layout works, no matter what those pitches happen to be. You can retune individual notes up or down as needed, and the fingering patterns will remain the same in every octave. Even so, the arrangement of black and white keys can introduce confusion. Your scale might call for the perfect fifth up from *C* to be on the *F*♯ key rather than on the *G* key. (This happens when the 12 notes are tuned to overtones 12 through 24—an interesting scale, which Robert Rich has used on some of his CDs.) In that case, you'll have to train your brain to interpret the keyboard in a new way.

If you want to play a scale that has, say, 19 or 31 notes per octave, the standard keyboard becomes a stumbling block. You can do it—I've done it—but it's a brain-twister. Fluent transposing, wide chord voicings, and fast runs are close to impossible. So far, none of the major MIDI hardware manufacturers has built a keyboard that can easily be used with scales that require more than 12 notes per octave. Smaller companies, however, have stepped into the gap with their own designs.

Keyboards that have a uniform grid, either in a honeycomb or checkerboard layout, are close to ideal for alternate scales. You can use a single keyboard for many different tunings if you like; it's not biased toward 12 notes per octave—nor, indeed, toward the octave as an interval. (If you're curious what happens when you get rid of the octave, search online for "Bohlen-Pierce scale" and listen to some of the music you find.) With a uniform grid, the fingering of chords and melodic modes will be uniform no matter what root note you start on. That is, the keyboard will be *isometric.* The conventional 12-note keyboard, in contrast, is not isometric because every scale has a different arrangement of white and black keys, forcing us all to learn 12 different fingerings for the major scales alone.

Isometric button/grid surfaces include the Novation Launchpad, H-Pi Tonal Plexus, Monome, and Livid Instruments Ohm64 (reviewed June '10). None of those, however, has velocity-sensitive buttons, which is why we haven't devoted individual sections of this roundup to them. The Tonal Plexus TPX2 (above, top) lets you add velocity data to your performance using a foot pedal, but the less expensive U-Plex model (above, bottom) lacks this feature. The Launchpad, Monome, and Ohm64 are basically button banks—control surfaces with grids of non-velocity-sensing buttons. They're good for triggering loops, but not for keyboard-style chords and leads unless you're happy to hear all your notes at a fixed velocity.



Starr Labs Microzone U-648

The U-648 is big and beautiful, with a handsome hardwood frame and a generous 288 hexagonal keys. Four knobs and a joystick are provided, along with basic pedal inputs. The operating system is not fancy, but it's packed with features.

You can split the keyboard into numerous zones (which can overlap) and create separate keymaps for various zones, so the actual layout of MIDI notes can be complex. The layout of black and white key tops makes it easy to visualize standard 12-note-per-octave scales along every two rows angling upward to the right, but the U-648 is a special-order item, so you can specify a different arrangement of black and white key tops if you want to. (I recommend against an all-white keyboard because having some visual feedback is very useful.)

The keys are velocity-sensitive, and velocity curves offer customized response. Even so, I'm not convinced that the velocity response of the U-648 is as smooth as on a good conventional keyboard, if only because there's very little physical key travel. As a result, finger movements seem a little harder to control.

You can easily play glissandi by sliding a finger along a row or column. The keys rock back and forth a bit to accommodate this move. As a result, they feel a bit spongy. You'll need to practice to create a smooth, musical playing style—and also to learn the shapes of the chords and scales, of course.

After creating a layout for 31-note equal temperament, I found the U-648 absolutely liberating to play. Harmonic and melodic patterns that are hard to find on a conventional keyboard were easy to find, and transposition was a no-brainer. I later tried my layout (that is, my assignment of MIDI note numbers to the U-648's keys) with other equal-tempered tunings, including 12, and found it effective in all of them.

The challenge, I found, was learning to think in two dimensions. A conventional keyboard is left-to-right linear. The geometry of a two-dimensional hex layout is more complex. In addition, the U-648's key tops are smaller than those on a conventional keyboard, and the hand tends to cover up a bunch of keys visually. As on any alternative keyboard, practice is required for mastery.

Von Janko Lives!

While geared more for playing the usual 12-note scale than for scales with different numbers of notes per octave, the Von Janko keyboard layout (right) is *isomorphic*, meaning that chords and scales are fingered the same in every musical key. Once you learn the basic layout, your finger "muscle memory" works even if transposing a song from *C* to *F*♯. Inventor Paul Vandervoort, profiled in *Keyboard* in December 1976, is trying to bring the Von Janko layout to market as the Daskin MIDI controller (daskin.com). The Harpejji (left) is a tapped string instrument whose isomorphic layout is similar (but not identical) to the Von Janko. Look for a full review of the Harpejji in an upcoming issue, and find out more at marcodi.com.

C-Thru Music Axis-49

If you're on a budget and don't need a lot of frills, the Axis-49 might hit the sweet spot. This bare-bones MIDI keyboard has no LCD and no wheels or joystick. Its only rear-panel jack is a USB port for connecting to a computer. When hooked to my Windows 7 machine, it was totally plug-and-play, requiring no USB driver.

C-Thru's main goal for the Axis-49 and its big brother, the Axis-64 (reviewed May '07) isn't playing alternate tunings and microtonal scales. Rather, their default "harmonic table" layout aims to let you play melodies and voice chords using the 12-note scale in a way that some musicians find more fluid and inspiring than a linear keyboard. Nonetheless, if you power up the Axis-49 while holding down one of the octave transpose buttons, it goes into "selfless" mode, in which the keys play MIDI notes 1 through 98 with no duplication of note numbers. You can then use the MIDI processing software of your choice to remap these note numbers, creating a keyboard layout suitable for your musical needs.

The hex keys are smaller than those on the U-648, just slightly wider than a fingertip, but their raised edges and less spongy feel provide marginally better tactile feedback. The edges are rounded, so playing glissandi and grace notes is easy.

I programmed a keymap using the program Pd, and I had no problem playing my 31-note scale on the Axis-49 with U-He Zebra as my sound source. With that many notes per octave, however, having only 98 keys in columns of seven keys each meant that the instrument played only an octave's worth of notes. Setting up a pair of transpose buttons in Pd was easy, but if I want to play wide voicings, I'll have to come up with an entirely different keyboard layout in software. Because wide voicings are one of the niceties that we'd like alternate keyboards to make practical, this may be a significant issue. Pd is free, cross-platform software, but learning a bit of Pd will also be a requirement if you want to use the Axis-49 to play your own scales because the instrument's own operating system has no programming features of its own.

Specifications

	C-Thru Music AXIS-49	Haken CONTINUUM	Starr Labs MICROZONE U-648
PROS	Inexpensive. Highly portable.	Separate pressure and Y-axis sensing for each finger is ideal for expressive playing, including polyphonic pitch-bends. Some internal sounds.	Highly configurable keyboard layout. Left-hand joystick and knobs.
CONS	User keyboard mappings require external MIDI software.	Requires extended practice. Not much tactile feedback. Not compatible with all soft synths. No LCD.	Shallow key dip. Keys feel spongy, not snappy.
PRICE (All direct from manufacturer)	$495	Full size: $5,290 Half size: $3,390	$3,825
Website	c-thru-music.com	hakenaudio.com	starrlabs.com

The Continuum Editor (below) is how you configure things like sensor behavior and control assignments. It also gives you control over the Continuum's internal synth engine.

Haken Continuum

The Continuum can be set up to play microtonal scales, but that's not its mission in life. Essentially, it's a giant ribbon controller with simultaneous X, Y, and Z (*i.e.*, pressure) sensing of as many as 16 fingers at once—32 with the internal sounds. The playing surface is flat, and the familiar pattern of two-then-three black "keys" is silkscreened onto it. The "white keys" in this arrangement are red, and the black and red stripes are the same width—a little more than 13mm, which is narrower than my fingertips and somewhat narrower than the white keys on a piano, which are about 23mm wide. The overall octave width, however, is the same as on a piano.

The fingerboard feels textured, not slick, and when you press downward it has a pressure dip of about 8mm. It feels spongy, but in a good way. It's available in half-length and full-length models; the full-length model has 93 "keys."

Surprisingly for such an expensive instrument, the Continuum has no LCD. It can be programmed by putting the fingerboard in data-entry mode; a single LED at the left end of the unit then changes color to give you some basic visual feedback on what you're doing. You're much better off, though, using the freely downloadable Continuum Editor software (see above).

The Continuum can play its internal sounds, or external hardware or software instruments that can operate in multitimbral mode and with 14-bit pitch-bend response. Each of your fingers will transmit on a separate MIDI channel. By default, finger pressure transmits CC11 and finger Y-axis position transmits CC74, but you can reassign these. The fingerboard can translate the initial pressure of a finger-stroke into MIDI velocity, but you may find that it makes more sense to send a uniform velocity and control the notes' loudness entirely from pressure, rather than using a volume envelope.

I asked the manufacturer what instruments he recommends for use with the Continuum. He mentioned Native Instruments Kontakt, a multitimbral sampler, and Symbolic Sound Kyma, a DSP-based hardware synth that sound designers love. If you want to play the Continuum polyphonically on a soft synth that isn't multitimbral, you'll most likely need a host program (such as a DAW) that can route each MIDI channel to the input of a separate instrument track and then insert multiple instances of the same synth, all of them set to the same sound preset. This is easy to set up in Ableton Live, but not in some other DAWs, so check your owner's manual. The internal sounds let you use the Continuum standalone, and you can tweak them in the Continuum Editor software, but in my opinion, though, they're not as rich in expressive possibilities as my favorite soft synths.

Playing the Continuum is liberating but quite demanding in terms of performance technique. You can play a chord, for instance, and then pitch-bend each note of the chord individually or add vibrato and volume swells to some notes and not others. You can set the instrument so that wherever you strike, your initial touch will be in tune with a normal scale, which is a handy feature. Even so, learning to play chords and fast runs on the Continuum is likely to require a great deal of practice. As a cellist, I've learned to space my fingers to play in tune without the aid of frets, so I know it can be done, but I'd still be reluctant to take a Continuum onstage without months of daily practice beforehand.

Dexterity Rules

Any alternative keyboard design will require practice if you want to play something more complex than "Chopsticks." And it's an open question whether it would be a smart move to devote intensive practice time to building your chops on an instrument that's being built by only a single small manufacturer.

There's surely room in the world for a more modern keyboard design—one that senses gestures other than key velocity and has a uniform layout for fingering in different keys and with different scales. But what's needed for several large manufacturers to embrace the same design, so that people feel safe learning to play music on the new keyboard. That's a lot more likely to happen, now that MIDI and OSC (Open Sound Control) can deliver a complex keyboard performance to a tone generator. It remains to be seen whether such a keyboard will ever be a large-scale success, so for now, don't stop practicing your Hanon. k

Download the author's MIDI note-remapping patch for Pd.

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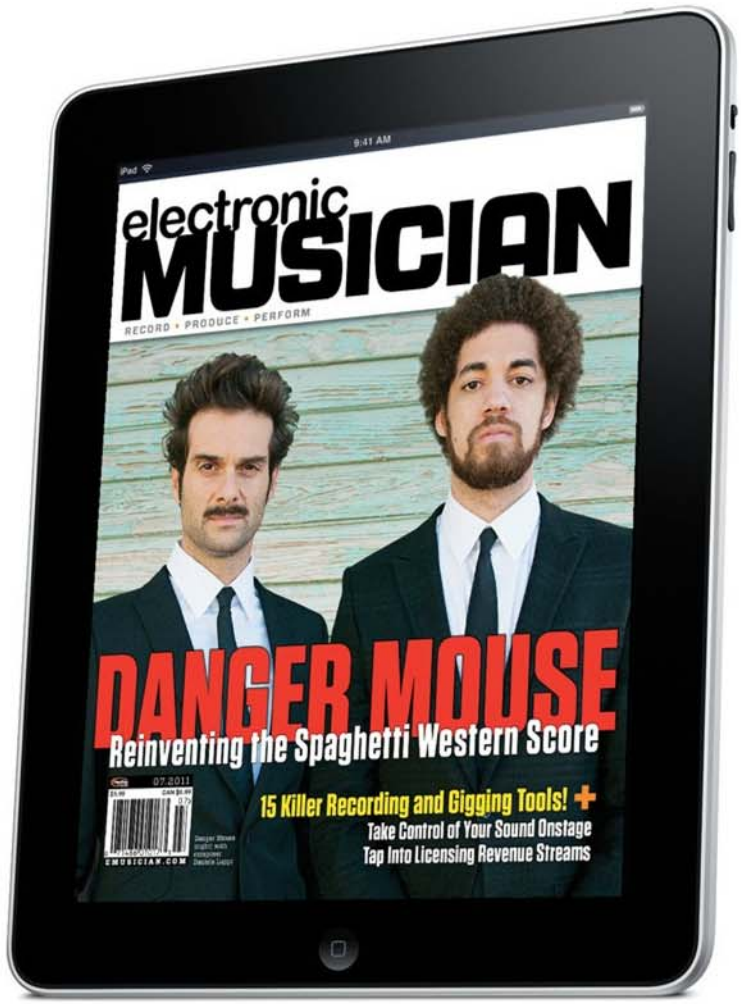

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KEYBOARD KEYBUY AWARD

Spectrasonics OMNISPHERE 1.5

by Peter Kirn

Seeing its six DVDs of sound content, you might be tempted to duct-tape a key down and let Omnisphere finish your film scoring gig. While the director would probably love the results, you'd be missing out on the real fun. Omnisphere *is* bursting with perfectly crafted preset sounds. The now 8,000-plus library covers everything from classic synths to rich, cinematic textures so well that, if sound programmers had a union, they'd probably protest. I'm tempted to quickly play through a number of them just so I can start spotting them on TV. But in a release modestly titled "1.5," Omnisphere hones its true talent: It's a surprisingly powerful tool for creative sound design when you're ready to go beyond those presets. We loved Omnisphere's sound design features when we reviewed it in December 2008. Now it's even deeper.

Sounds and More Sounds

Once installed, Omnisphere 1.5 passes the "play it without reading the manual" test with flying colors. You can, as I did, easily store its sounds on an external drive. You may want to dedicate an afternoon to that installation, but then you can begin dialing up well-organized presets and start playing immediately. As before, it provides both sampled and modeled waveforms, for all the capabilities of a high-resolution sample playback synth atop a full-blown virtual analog/digital hybrid synth. When you do need documentation, it's among the clearest and most thorough available, with hours of online video tutorials.

Omnisphere resists the preset maladies that tend to afflict

Fig. 1. Improved granular editing parameters mean you can make any preset unrecognizable.

Fig. 2. Each of Omnisphere's eight parts has an independent arpeggiator. Drag and drop a MIDI file, and you can lock the timing to any groove.

Omni TR for iPad

Far from a me-too gimmick, Omni TR is one elegant remote control—and it's free at the iTunes App Store. Though it works on your computer with a mouse, the "Orb" controller is far more satisfying when you play it on the iPad's touchscreen. Omni TR also provides access to multis in both Live and Stack modes, synth edit parameters, and the new arpeggiator latch controls. Launch the app, it finds Omnisphere running on a WiFi network, and you're off and running. The only problem is endemic to WiFi: You sometimes have to restart the app if the connection is dropped. But prop an iPad atop a keyboard and connect any recent laptop, and you'll make just about any high-end hardware synth workstation jealous.

instruments of this kind. Yes, you'll find endless ear candy and evolving pads. But you'll also find raw waveforms for building your own sounds, bread-and-butter synths, carefully constructed vintage instruments, aggressive leads, and even utility patches for test purposes. You can let your freak flag fly, or build a Hollywood score, or use Omnisphere as a lead synth. You get basics along with your weird, plenty in between, and it's all eminently playable.

Granular, Harmonia, and Waveshaper

Hidden amidst innocuous-looking parameters are three sound-sculpting sections with radical capabilities—Granular, Harmonia, and Waveshaper—with new "zoom" modes accompanying each for easy editing.

The Granular section is simply mind-bending, even if you've used other granular synths (see Figure 1 above). It can introduce subtle, shimmering timbres, as well as more experimental, extreme effects. New Speed and Position modes produce some startling, gorgeous results. Add the unique Glide parameter, and you can make some very odd sounds as the grain pitch swoops from one sound to another. Some parameters have unexpected names: Grain Depth is actually the *number* of Grains. (Careful with that one—it's the parameter that'll quickly bring your CPU to its knees, as with any granular instrument.) Intensity actually modifies grain size and spacing simultaneously. The design of the controls is welcome: You're more likely to get good results because of how Spectrasonics handles the parameter relationships.

The name "Harmonia" might imply a harmonizer, but this is a different animal. This unique sound design tool gives each harmonic component of your sound independent oscillators and synth controls. The results can produce basic chords, but also additive synthesis-style harmonic motion or new multi-oscillator tones. Each voice has separate controls for phase, shape, symmetry, sync, and even individual waveshapes.

Browsing through Omnisphere's presets generally shows off a lot of crisp, pristine cinematic sounds. If that leaves you wanting some grit and distortion, head straight to the new Waveshaper. As with the other tools, Spectrasonics has focused on polyphony and the front end of the signal chain instead of just adding effects. For example, when you apply bit-crushing or sample rate reduction, you get fully polyphonic distortion inserted *in* each voice's signal chain rather than afterward, which adds dimension to your dirt rather than squashing everything at

once. You can even set the Waveshaper effect to process the output of the Oscillator, the Filter, or the Amplifier, and additional parameters controlling aggressiveness and animating the effect in time give you yet more control.

Omnisphere hides these screens by default, keeping the look clean. The new Zoom modes work well, with some caveats: Switching in and out of the zoomed view requires hitting a specific icon, and enable/disable switches often require switching between modes. For instance, if you want to experiment with toggling the Ring Modulation, Waveshaper, and Harmonia modes, you'll need to un-zoom any one of the panels. That slightly slows down an otherwise slick workflow. It's a minor complaint—partly because of how well-organized everything is, and the fact that you can add realtime control via MIDI or now iPad (see "Omni TR for iPad" on page 55)—but it's an opportunity for still more refinement.

Control and Performance

Let's make this simple: If you can do it in Omnisphere, you can probably control it in real time. For adventurous musicians exploring its tabs and zoom screens, there are seemingly endless possibilities for variation. Right-click any one of those parameters, and a pop-up menu lets you easily map MIDI control or host automation. A new feature even clones from one channel to another, useful on sophisticated alternative controllers like the Eigenharp. There's access to expression pedals and foot triggers from the main edit screen, and Spectrasonics has added polyphonic (yes, polyphonic) aftertouch support to 1.5.

One of Jim Aikin's few complaints with the original Omnisphere in his December 2008 *Keyboard* review concerned the lack of latch capability on the arpeggiator, especially since each part has an independent arp (see Figure 2 on page 55). Wish granted: 1.5 adds new latch options. You can trigger in legato mode, by host song position, or at the start of a note, in the arp page itself or from the Live mode overview. You can also drag in your own MIDI files and lock the arpeggiator's groove to them, freeing up new possibilities to make the patterns more human.

The modulation matrix lets you control each of six LFOs, key tracking, MIDI control, and the like. It's all a drop-down menu affair; you don't get the kind of drag-and-drop graphical interface we've seen in tools like Native Instruments' Massive or Future Audio Workshop's Circle. But it's unquestionably powerful and flexible, still another reminder this is as much a semi-modular synthesis system as a multi-gigabyte wellspring of preset sounds.

The interface of Omnisphere's modulation matrix may look relatively conventional, but the new Orb is anything but. A circular morph pad, the Orb is a do-everything sound shaper that can interpolate between multiple parameters at once, with Lemur-like physics and Kaoss-style motion recording. Using the Orb works with the mouse, but other methods are more fun—you can assign morphing to MIDI, or use Spectrasonics' Omni TR iPad app.

The Orb's "Dice" control is far more than a randomizer—it intelligently analyzes any patch and automatically changes parameters as you play, in musically useful ways. Inertia controls the movement of the morph "puck," and you can record and play back gestures, quantized to groupings of bars if you like. We've seen similar-looking interfaces, morphing of multiple parameters, and motion recording in other apps and controllers. Omnisphere, however, is unique in adding realtime, dynamic assignment of parameters for morphing. Of course, you can set these parameters manually if you prefer.

Conclusions

Omnisphere 1.5 is a marvel. It balances easy access to preset sounds with deep sonic control in a way no other soft synth has. If you're just looking for gigabytes of expertly programmed sonic inspiration, it's an easy choice. The Orb and other smart controls let you vary those sounds—in large amounts or small—using your ears, without having to delve deeply into the synthesis engine. Or, delve as deeply as you please. With thousands of sounds as possible starting points, this much power is almost frightening. That leaves only one big frontier for version 2.0, since Spectrasonics is calling this 1.5: Allow sound designers to load samples of their own. Add that, and you might never have to touch another software synth again. Even without that ability, though, Omnisphere 1.5 is one of the most powerful, deep, and best-sounding synths—hardware or software—in the world, and a definite Key Buy. k

Specifications

PROS Insanely huge sound library gets bigger. Unique polyphonic waveshaping, granular synthesis, and multi-voice harmony. Orb morphing and iPad app. Endless live control.

CONS Some clicking necessary to move between modes. Still no standalone version. Can't load your own samples.

CONCEPT Mega-soft-synth employing multiple synthesis technologies.
SYNTHESIS TYPE Wavetable (variable DSP oscillators), virtual analog, FM oscillators, and granular synthesis.
MULTITIMBRAL PARTS 8.
SYNTH ENGINE 6 LFOs per patch, 8 multi-breakpoint looping envelopes per patch, 17 filter types, 8 arpeggiators, polyphonic timbre shifting, bit-crushing, waveshaper, ring mod, and glide. Dual filters per layer. Multi mixer, aux effects, and mastering effects racks.
COMPATIBILITY Windows 7/Vista: VST, RTAS. Mac OS X 10.5 or higher: VST, AU, RTAS. 32-bit and 64-bit native versions for Windows and Mac OS X.
REQUIRED DISK SPACE 50 GB.

PRICE
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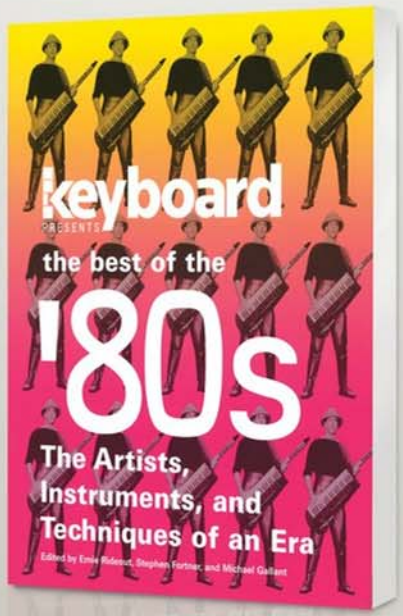

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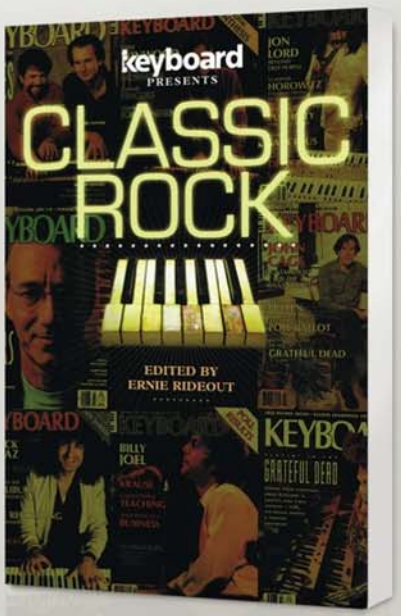

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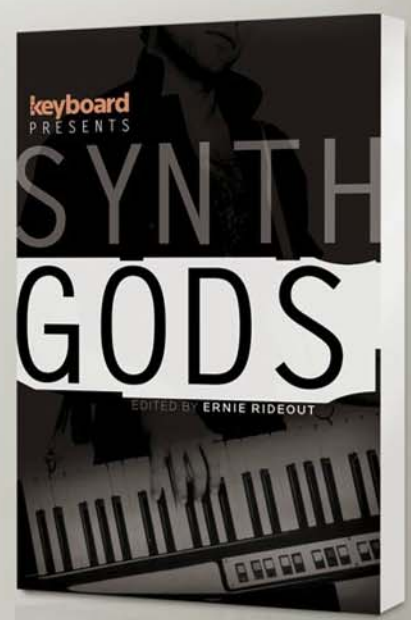

SYNTH GODS

Culled from the pages of *Keyboard* magazine, this book spotlights artists who did much more than just play synthesizers: they changed the course of music history and inspired generations. Featuring in-depth profiles of Jan Hammer, Wendy Carlos, Rick Wakeman, Brian Eno, and others, this book delves into how these new, untested boxes of circuitry captured the imagination of so many legendary artists.

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Roland
ATELIER COMBO AT-350C

by Ken Hughes

By virtue of its most visible features, the AT-350C would seem to appeal equally to Mr. and Mrs. Scheblanski, discerning folks who want to play and sing along to music at their summer condo; "Fingers" Fowler, who plays in a bar band and wants a self-contained rig that fits in his '92 Geo Storm; and Pastor Scott, who leads worship in a contemporary-minded congregation where he sometimes has a rock band and other times just an organist. I'm not the Scheblanskis, but like many of you, I wear the hats of Fingers as well as the keyboardist in Pastor Scott's band. So I was able to put it through its paces in those environs.

Overview

There are two sound generators here: a sample-playback engine and a tonewheel modeling engine. Organized into sections corresponding to the keyboards, the Upper and Lower sections default-assign (sensibly enough) to the upper and lower manuals, respectively. The Vintage Organ section default-assigns to *both* manuals. The Solo section defaults to the upper manual, and the Pedal section . . . guess where? However, anything can be reassigned pretty much anywhere.

The lower, 64-note manual (five octaves plus three more notes down to a piano-like *A* on the bottom) has waterfall keys but also adjustable velocity sensitivity, so in addition to being the ideal choice for Hammond-style pursuits, it's also the natch for pianos and other sounds you might play with both hands. You can also split and layer sounds from the Drums, Manual Percussion, Bass, Lower, and Solo categories on the lower manual with complete flexibility. The 49-note upper manual is chiefly intended for the Solo voices, but it can also play organ and other sounds as well.

Oddly, any Solo voice that offers the instrument-behavior-modeling bonuses (Roland calls 'em SuperNatural) only works properly on the upper manual. Once you assign these voices to the lower manual or pedals, they become "normal" sample-playback voices, albeit quite good ones. Also, for songs that require switching from organ to piano

and back again multiple times (think Petty or Springsteen for the bar-band set and Tim Hughes or Third Day for the worship players), I might prefer the upper manual have waterfall keys as well. Why? Because I really want the longer keyboard for piano parts, but I also really want the waterfall keys for organ.

To play both from the lower (waterfall) manual, you can either do two button-presses to toggle both the Lower and Vintage Organ sections on and off as needed, or simply write two registrations, which save the state of the entire instrument. This is as easy as touching and holding the Write button while touching one of the adjacent preset buttons numbered 1 through 8. In pipe organ fashion, all these buttons are located on the fallboard between the manuals. This makes quick preset switching super-easy. Ninety-nine banks of eight presets each are available.

Roland provided us with a PK-7A pedalboard (sold separately at a street price of around $1,500). You need it to take full advantage of the AT-350C, as its expression pedal has left and right toe-kick switches that can, among other things, trigger the alternate articulations of the SuperNatural sounds. (Roland says they hope to offer a standalone expression pedal with similar switches in the future, but none is currently available.) The PK-7A connects to the mothership with a single multi-pin cable that carries both data and power—pretty slick. Bonus: The pedals don't *have* to do bass, as you can assign any sound and shift it up to three octaves higher. Mark, my music pastor, often asks for a "clothesline," which is shorthand for a high, one-note part that floats over the chord changes. If both hands were busy, I could play a high string sound with one or both feet because the pedals transmit polyphonically.

The Others button adds utility and flexibility, and one is found in each section's sound selectors. This pool of "other" sounds (actually the entire Voice list) is available to each set of keys—including the pedals—and although the arrangement of banks does force you into some mild contortions, it requires no menu-diving at all; it's all done from the surface-level controls. For example, to layer a piano and a pad on the lower manual, you'd pull up a piano from the Lower section's Piano bank. Because pads are in the Others bank, they're not available simultaneously within the same section, so you'd raid the Upper (or Pedal) section for a pad sound and touch "To Lower" to assign it to the lower manual. The upper manual is still available for Solo and Vintage Organ sections, and they can be layered or toggled at will simply by

lighting the buttons that activate them in whatever combination you like. If the Pedal section hasn't been touched, it can be used for any kind of bass sound or, because it can be transposed so widely, something completely not bass. Again, you can save the whole enchilada by touching and holding Write and a preset button. This includes mixer settings (including reverb parameters and per-section sends), organ settings (drawbars, overdrive, vibrato/chorus, percussion), and all active auto-accompaniment settings, including locking those controls so you don't accidentally trigger a tango with an errant touch intended for the rotary speed button.

Two pairs of stereo outputs, main and aux, give you routing options. Choices for the aux outs include "Ambience" (just the reverb output), "To Effects Unit" (a clone of the Main Outs intended to let you apply external processing), "Orchestral Voices" (everything but organ), and "Ensemble" (auto-accompaniment). A pair of inputs lets you connect the device of your choice to be mixed into the Main Outs. A USB type B connection on the back goes to your computer, and a USB type A connector tucked at the very left end of the control panel accepts thumb drives for recording a stereo audio file or a Standard MIDI file of everything you do on the AT-350C. Operating system and sound updates are also done via thumb drive.

Sounds

The main event in the sounds arena is the Solo section, where the "W" bank contains the SuperNatural sounds. These are all identified by the prefix "N." in the name (not to be confused with the "N" *bank*, which houses plucked and fretted string instruments), and most of them are simply uncanny. Interaction between velocity, legato/staccato playing, and the status of the toe-kick switches on the expression pedal empower you to wring additional realism from the AT-350C's sounds. There's definitely a learning curve involved, but it pays off. For your travail, you get performance gestures specific to an instrument's physiology. The trumpet, for example, gives a realistic gliss with a touch to the left kick-switch and legato playing with a tap to the right. You hear the artifacts a real trumpet emits when the valves are operated and the embouchure is changed—not the mechanical noise, but the pitch burbles and "breaking" of the tone as the valves are actuated. Play notes at the top of the velocity range with the right switch engaged, and you get an actual brass fall, not merely a downward pitch-bend; you hear the discrete steps as the trumpeter slackens his embouchure. D-Beam gestures let you bend the pitch up or down, with realistic note-skips. All 15 SuperNatural sounds offer you the same kind of control by harnessing the volume pedal, kick-switches, D-Beam, and velocity, and they really are breathtaking.

You may be asking, "Isn't Roland just catching up to what Yamaha has had in the Motif (or apples-to-apples, the Tyros arranger line) for ten years now?" It's tempting to position Roland second in that particular arms race, but doing so fails to take in the whole view. I see Roland going for differentiation rather than "me-too." My take is that while the Tyros gives you glitzier gestures and articulations, the AT-350C is a little more . . . *classical* in its approach.

I do think the American weekend warrior—tavern or tabernacle—would be better served by a few more pad sounds (there are only six) instead of the plethora of admittedly excellent Chinese instruments, though admittedly, these may have broader appeal in overseas markets. For comparison, my church has the Roland RD-700GX, and it offers more than a dozen pads. There's also only one Clav sound on the AT-350C, and while there's a nice Rhodes electric piano sound, there's no Wurly—a significant omission if you want to cover Ray Charles or Tom Petty.

Perhaps the sound complement is too broad across categories rather than having more of the depth I'd like to see *within* categories, especially considering the price and the fact that there's no sound editing. That's right—you can't tweak and save sound settings such as the filter cutoff or envelope parameters. However, Roland's signature D-Beam can affect the filter in real time, and it also handles pitch-bend. While the lack of sound editing on a $5,500 instrument is a major omission (Casio's $500 WK-7500 arranger offers rudimentary editing), the as-is quality of the sounds is very high. The question is, can you find exactly what you want, and if not, can you accept compromise? That said, it's becoming more and more apparent that the AT-350C's true *raison d'etre* is to simply be the baddest mega-arranger keyboard on the block. Let's get into that now.

Auto-Accompaniment and Recording

The styles here are among the hippest and most musical I've ever heard from an arranger. This is where the AT-350C's sounds realize their full potential. As fodder for the onboard Styles, they had better far outshine what you find on sub-$1,000 personal keyboards. And oh, do they ever. There's a jazz-organ-with-big-band style that reminded both me and editor Stephen Fortner of Quincy Jones' "Soul Bossa Nova" (in the *Austin Powers* context), not to mention Jimmy Smith's "The Cat"—this brass really swings! A couple of the Gospel styles sound as though they

Specifications

Stunning SuperNatural sounds. Extremely realistic and musical accompaniment styles. Excellent drawbar organ and rotary simulation. Flexible assignment of sounds to different manuals. SMF and audio file recording and playback.

No sound editing. Non-organ factory sounds need more variety. Pedalboard is required to take best advantage of SuperNatural sound articulations, at significant extra cost.

CONCEPT Dual-manual clonewheel meets high-end arranger workstation.
POLYPHONY 128 voices.
SYNTHESIS TYPE Sample playback; tonewheel modeling for organ sounds.
SEQUENCER 7 tracks; approx. 40,000-note capacity.
WEIGHT 56 lbs.

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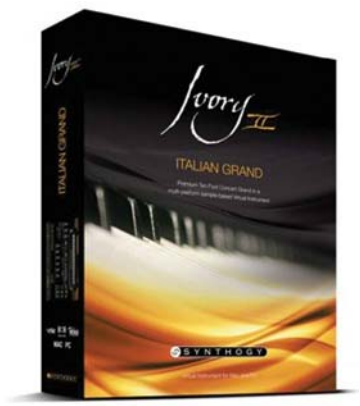

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can dang near lift the roof off the church all by themselves, *without* the choir. There simply isn't enough room for all the highlights. It's enough to say that if you're up for spending this kind of money on an arranger, you have a right to expect first-class material, and on this point the AT-350C delivers in abundance. As much as "organ as home entertainment center" players might dig it, much of this material would also appeal to a jingle composer facing ever-shrinking fees and schedules. The "feels" are that good.

You can set things up so that you trigger chord changes with the bass pedals or your left hand on the lower manual, or so the AT-350C scans the manuals and makes holistic decisions about the chord you're going for. Despite my trying a lot of altered and extended chords, it almost always guessed my intentions correctly.

Standard MIDI file recording is ridiculously easy. Simply get the instrument set up to record the song (either by recalling a preset registration or by setting up the panel manually), press the dedicated Rec button, and then use the value up/down buttons to select "SMF" in the display. Now, touch the Play/Stop button for a two-measure count-in, and have at it. There's only rudimentary onboard editing, but you can save your tune to a connected USB thumb drive and then import that data into a computer for editing in any sequencing program. As long as you save your edited version as an SMF on the computer, you can later copy it back into the AT-350C's local memory. Additionally, you can record the Bass, Lower, and Solo/Upper section parts individually for more personalization.

Unlike SMF recording, which can be done into the AT-350C's internal memory, audio recording requires more space, and so a USB thumb drive must be connected. You follow the same procedure as SMF recording, but choose "Audio" rather than "SMF." Audio is recorded as a WAV file.

In Use

As you've probably already guessed, I put the AT-350C to work during Sunday services with my church's band. What we do has more in common with a weekend bar band than, say, traditional hymns. The set list was five songs, and I started by locking out the auto-accompaniment controls.

For one song, I simply needed a synth lead to play an ostinato on the chorus and turnarounds. Nothing in the ROM was close to a match, so I found a sound that suited the part in a different way. Unfortunately, I couldn't add delay to match the recording better because there's no delay effect in the AT-350C. For the rest of the tune, I found a dark pad very similar to the one we favor on our RD-700GX. It was great sonic glue.

There's a great overdrive effect as part of the rotary simulator, but you can't apply it to anything other than organ. I settled for a dark Rhodes and cranked up the 'verb. The reverb is cool—choose a type of space (in this case a cathedral) and a material: carpet, wood, marble, etc. On the bridge, I usually reach for the church's Korg BX-3 organ to my right. Here, I could put Vintage Organ on the upper manual and memorize it with all the drawbars at zero. This way I could decide the voicing later, as the bars are always live. Writing the patch with all drawbars silent also kept the organ off the lower manual.

Lots of the songs are more guitar-oriented and call for pads. I found the lovely "HollowReleas," an analog pad with piano-like attack. But because I had two more manuals to play with, I added a high string to the pedals and put organ on the upper manual, bringing organ fills in on the second verse of one tune for some development and the high string on the last chorus for a little lift. Nice.

On another song, I play a three-note motif on piano all the way through. I added a glockenspiel assigned to the upper manual. I could've layered it with piano on the lower manual, but I like to flam the hits a little so that it sounds like two musicians instead of a layered keyboard patch. Here again was a golden opportunity for a high string on the pedals for the last chorus.

For the last song of the set I needed a sort of huge "pad that ate New York," like on U2's "Where the Streets Have No Name." I decided to use textures as dynamics, so it was stringy things up, down, and below. I put a SuperNatural solo violin up top for definition and layered it with an icy drawbar voicing. I then put a darker pad on the lower manual and a warmer midrange string on the pedals. This is where the PK-7A's volume pedal was simultaneously cool and tricky; on the SuperNatural sounds, it's truly an *expression* pedal, adding "rosin" and vibrato to the solo violin as it increases the volume. Not so for the organ and "regular" sounds, so it was a bit of a balancing act between the basic volume settings and the extremes of the expression to keep everything steady until I remembered that the pedal can be deactivated on a per-section basis. Assigning it to the Solo section only, and writing that into the preset, sorted me out.

Conclusions

Roland founder Ikutaro Kakehashi got into the keyboard business out of a fascination with organs: classical, theater, and electric. The Atelier division got started as, literally, Kakehashi-san's *atelier*—French for "workshop." That explains the obvious care and devotion expended on Roland's tonewheel modeling technology, not to mention the auto-accompaniment patterns that make it clear someone cared enough to sweat over them.

For me, Pastor Scott, and Fingers Fowler, the $5,500 question is, "Does the AT-350C amount to a replacement for a full keyboard rig?" I'd have to say that for similar money, we're better served by more familiar instruments—for example, pairing an RD-700NX with a V-Combo, or either of those with a Fantom-G.

Who should seriously consider the AT-350C? For one, the solo entertainer who plays gigs on an arranger keyboard. The AT-350C's top-notch auto-accompaniment styles, expert chord recognition, super-realistic solo sounds, and two manuals to stretch out on make it ideal for that application. Then, there's the time-tested idea of the keyboard as home entertainment center and family focal point. The chief competition in this market consists of polished-cabinet digital pianos that have arranger features, plus a few modern console organs. The AT-350C is far more portable, and in many cases less expensive, than either. What's more, it sounds so hip that it may broaden even the Scheblanskis' musical outlook. k

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Mixing and Mastering

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An ad in *Keyboard* 's Classifieds reaches more than 16,900* serious musicians for only $2.40 per word plus $7.00 for an address. Minimum charge: $25.00. Please underline words to appear in bold type and add $0.50 per every bold word. Please indicate clearly any words to appear in all caps and add $0.25 per every cap word. Each phone number, e-mail address, or website address counts as one word. Call for display rates. 3 months minimum schedule required. Deadlines are the 8th of the month, 2 months prior to cover date. Businesses must list business name in ad. All ads must be received in writing, paid in full in advance. All ads must be music-related. Retail advertisers may not list discounted prices or percentages on specific models, unless items are used or discontinued. Advertisers must provide us with complete name, street address, and phone number, whether or not included in the ad copy (you may list a PO Box address in your ad, however). Mail ads to: *Keyboard* Classifieds, Attn: Contessa Abono, 1111 Bayhill Dr., Suite 125, San Bruno, CA 94066. FAX (if paying by MasterCard, or Visa): (650) 238-0263. For more information, call Contessa Abono at (650) 238-0296; E-mail: cabono@musicplayer.com. (*Audited circulation; does not include pass-along rate.)

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Nick Rhodes poses with a Korg Poly-800 on our May '84 cover.

KEYBOARD ARCHIVES

DURAN DURAN'S '80s DREAM RIG

by Stephen Fortner

If you owned hair gel and even just one synth in the '80s, you dreamed of your band making it to the point where you could afford a rig like this: "Nick's riser is about eight feet square, and from the back it has his rack, his mixer, the Fairlight TV screen, and two JBL monitors," explained Duran Duran's keyboard roadie, known only as "Rocks," in our May 1984 feature. "To his left, he has his Prophet [5] on top of his Crumar strings. The [Roland] Jupiter-8 and Fairlight keyboard are directly in front." Come to think of it, that *still* makes us jealous. Here's what keyboardist Nick Rhodes had to say about two of those pieces.

Fairlight CMI

"You can get remarkable results from the most ridiculous things. We have this sort of tube in the studio from a vacuum cleaner. Somebody went in there with drumstick and ran it down this tube. It didn't sound like anything I'd ever heard before. We put it into the Fairlight and started stabbing at it, as opposed to holding the keys down, and it sounded like a really strange blend of funky guitar and bass."

Crumar Performer

"I could sample it into the Fairlight or the Emulator, so I could get the same sound. . . . But somehow there's a quality to that one particular string synth. I've listened to all of them—the ARP string synth, the Jupiters, everything—but I just love the quality of the Crumar. It's so plastic! I might only be holding down individual notes for the period of a final chorus, but it's on nearly every hit record we've ever had."

Be Moved
Inspiration meets Integration

Get Moving
Connectivity meets Mobility

MOX6–semi-weighted 61-note

MOX8–88-note graded hammer action

moX–The Mobile Motif

For the past decade, Motif synthesizers have been the industry standard for both live performance and studio production. Combining Motif technology with new multi-channel USB computer integration technology and bundled VSTs, the MOX 6 and 8 are the most powerful, mobile and affordable Yamaha music workstations ever. They are destined to bring Motif music production to a whole new generation of players and producers.

- 1217 Voices and 355MB of waveforms taken directly from the Motif XS
- 256 Performances with 4 arpeggios that spark your musical inspiration
- Direct Performance Recording to the internal Song and Pattern sequencer
- Extensive keyboard controller features for all major VSTs and DAWS
- Built-in 4-in/2-out USB audio interface with one-cable computer connectivity
- Comprehensive cross platform software bundle including: Yamaha YC-3B organ, Steinberg Prologue Virtual Analog, Cubase AI DAW
- Extremely lightweight for mobility (MOX6–15.4 lbs, MOX8–32.6 lbs)

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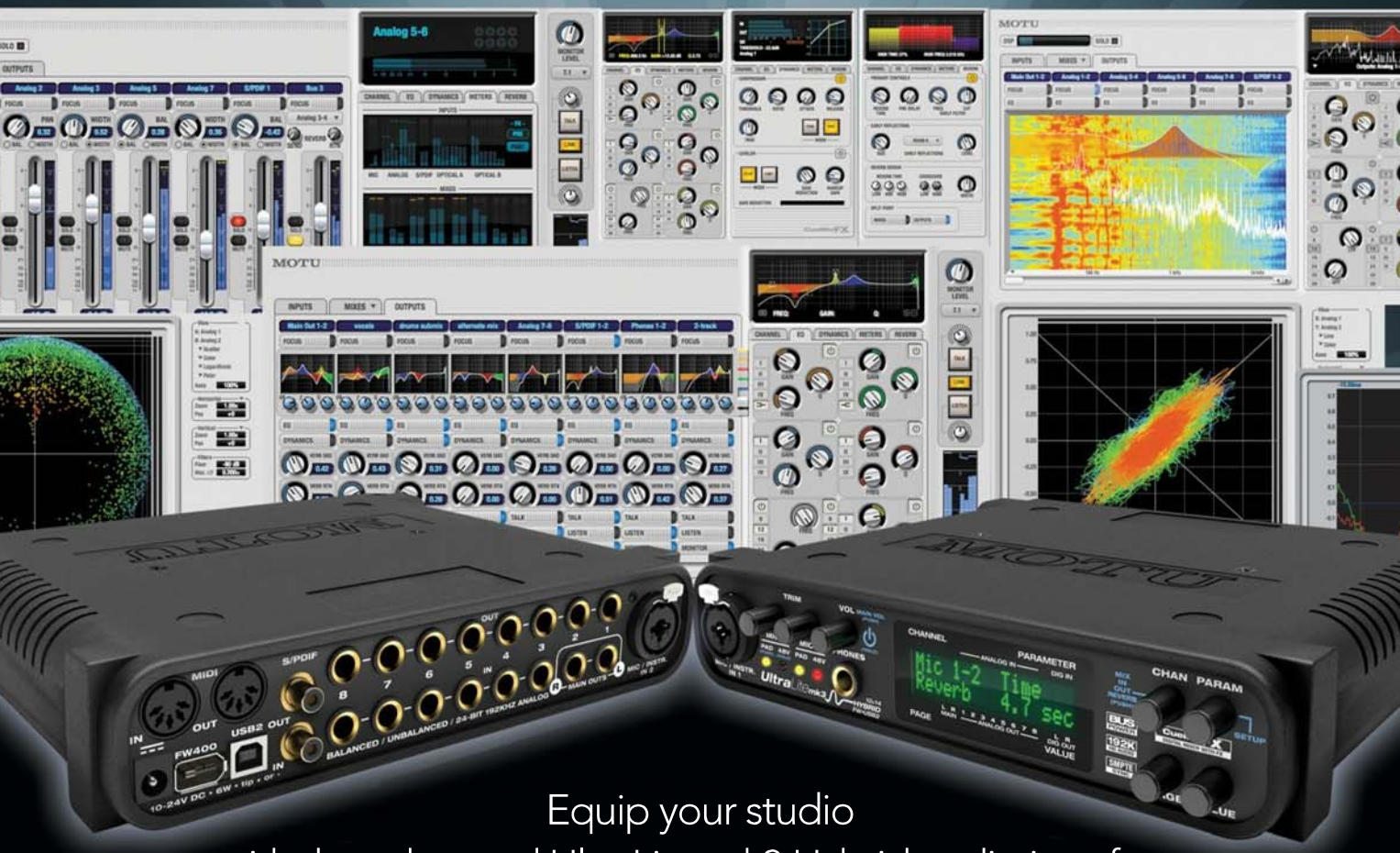
HYBRID TECHNOLOGY



Equip your studio with the advanced UltraLite-mk3 Hybrid audio interface

Compact 10 x 14 Firewire • USB 2.0 recording system

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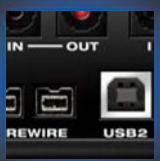
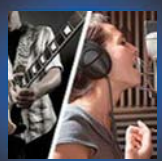
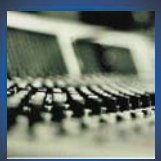


16-bus mixer for monitoring and live mixing



Modeled EQ, compression, and reverb



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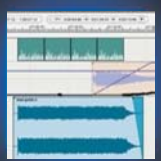
Tuner and advanced audio analysis tools

AudioDesk® workstation software



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